

# amateur radio

JOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA



VOL. 48, No. 7

JULY 1980

## ***FEATURED IN THIS ISSUE:***

- ★ **AMATEUR RADIO FOR THE CRUISING YACHTSMAN — Part 1**
- ★ **A DECADE ON VHF — Part 2**
- ★ **THE 1980 FEDERAL CONVENTION, ANNUAL REPORT**
- ★ **REMEMBRANCE DAY CONTEST RULES 1980**
- ★ **COLLECTORS CORNER — NUMBER 1**

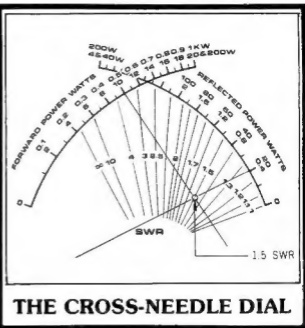
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# amateur radio

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## Cover Photo



Navigation and Radio Area on a Cruising Yacht — See Article: "Amateur Radio for the Cruising Yachtsman", commencing on page 10.

Photo by Eddie Rooms VK4AER/MM

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Divisional information (all broadcasts are on Sundays unless otherwise stated).

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7045, 14090 kHz, Ch. 52, 09.00Z 3546 kHz, Ch. 52.

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Secretary — Mr. G. F. Alkinson VK3FYA

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Gen. Mtg. — 2nd Wed., 20.00.

QLD:

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Secretary — Mr. W. L. Gledits VK4ABG

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Gen. Mtg. — 3rd Friday.

S.A:

President — Mr. I. J. Hunt VK5OX

Secretary — Mr. W. M. Wardrop VK5AWM

Broadcasts — 1820, 3560, 7095, 14175 kHz; 28.5 and 53.1 MHz, 2m (Ch. 6): 09.00 S.A.T.

Gen. Mtg. — 4th Tuesday, 19.30.

WA:

President — Mr. Ross Greenaway VK6DA

Secretary — Mr. Peter Savage VK6MCP

Broadcasts — 3560, 7075, 14100, 14175 kHz, 28.47, 63.1 MHz, 2 metres Ch. 2 Perth, Ch. 8 Wagin, Time 01.00Z.

Gen. Mtg. — 3rd Tuesday.

TAS:

President — Mr. R. Emmett VK7KK

Secretary — Mr. B. J. Morgan VK7RR

Broadcasts — 7130 (SSB) kHz with relays on 6 and 2m Ch. 2 (5), Ch. 8 (W), Ch. 3 (NW), 09.30 EST.

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VK3 — 412 Brunswick St., Fitzroy, 3065 (Ph. (03) 41 3535 Weekdays 10.00-15.00h).

VK4 — G.P.O. Box 638, Brisbane, 4001.

VK5 — G.P.O. Box 1224, Adelaide, 5001 — HQ at West Thoburn Rd., Thoburn.

VK6 — G.P.O. Box N1002, Perth, 6001.

VK7 — P.O. Box 1010, Launceston, 7250.

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VK5 — QSL Bureau, Mr. Ray Dobson VK5DI, 16 Howden Road, Fulham, S.A. 5024.

VK6 — QSL Bureau, Mr. J. Rumble VK6RU, G.P.O. Box F318, Perth, W.A. 6001.

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## EDITOR'S DESK

Bruce Bathols VK3UV

At the last Federal Convention, AR came under much scrutiny. One of the present problems is the increasing costs of publication. A substantial portion of your annual subscription is set aside for AR production, and as the next year's fees are fixed during the current year, any excess costs outside normal inflationary trends strain the Institute's resources.

To maintain the quality our members have come to expect, the entire production itself is kept constantly under review. Last year, observant readers will have noticed a slight change to the paper quality. This saved the Institute many hundreds of dollars over the year alone.

We are again now hit with the inflationary spiral through wage awards, paper and printing costs, postage increases, etc. You name it. If it can be increased this year, it will be, and of course we the WIA members must pay for these rises if we desire to maintain and improve our existing standard.

Many of you will also have noticed the lesser number of readers advertising in AR. The reasons for this are varied, but can be summarised mainly under the heading of increased costs due to inflation. Advertising is not cheap, but the revenue it brings helps to defray our publication costs. In order to keep our advertisers happy and to gain their continued support, positive feedback is required. How often do you tell the advertiser that you are buying his goods because you read his ad in AR? Let him know, often and loud, that AR was the vehicle which made you purchase his goods offered for sale. If the advertiser does not get this type of feedback, he goes elsewhere, and of course the quality of AR will suffer as a result.

This month sees the start of our efforts to adjust to this increasing spiral. From this issue forward, AR is being printed fully by the Web Offset method, and so we become accustomed to this change-over, some teething problems are to be expected. Please bear with us while we smooth out the rough edges. As a result of the Web Offset printing, subtle changes and improvements will be gradually introduced over the next few months.

Lead times for current materials will be able to be slightly lengthened (but not yet, we shall advise you shortly of the new cut-off dates), a greater use of spot colour will be made, and an increase to the number of printed pages will be possible eventually.

With these changes we also expect to be able to maintain our present standard and to stay within the executive budget for the rest of the year.

Also at the Convention we agreed to include once again "Divisional Notes". There is much other general information contained in each Division's notes which are sent as an insert to a particular Division's members only, but is lost to WIA members as a whole.

Therefore, in the next few months, Divisional inserts as such will be phased out, and instead will form part of a special new section within AR. This will also alleviate some distribution problems previously experienced with inserts. We hope that everybody will be better informed as a result, and we look towards greater unification of our membership without the fragmentation that exists today.

"Amateur Radio" is the only vehicle to achieve this.

Many of you will have noticed the International favour creeping into some of our articles. Several original articles have been received direct from our subscribers overseas, and it goes to prove that AR has become widely accepted overseas as well as within Australia.

This does put us into a slightly embarrassing situation. At the present time we are slightly overloaded with original articles, and these will be published as soon as we can make the space available. Unfortunately, some extra delays will have to be expected before publication can be made. However, do not let this deter you from submitting your articles as in the past. I think you will agree that a slightly longer delay is worth the wait, when you consider the vast coverage AR gets, and the possibility of being reprinted in the larger international amateur magazines.

A list of original articles accepted for publication will be published shortly to let everyone know what is around the corner.

Authors can help us to clear the backlog and speed up publication in the following ways—

1. Type on one side of the paper only, double spaced preferred — this includes Hamads and letters to the editor.

If no typewriter is available, please print clearly, leaving sufficient space between the lines for editorial corrections, etc.

2. For technical articles requiring drafting, ensure the diagram is laid out clearly, and labelled legibly. Alternatively, if you are capable of drafting yourself to the standard previously published, please do so, allowing for sufficient definition for items which will be reduced photographically.

I know that we have our members' support and we are all going to benefit because of it.

73 for now, and don't forget — SUPPORT OUR ADVERTISERS, AND TELL THEM YOU SAW THEIR ADVERTISEMENT IN AR.

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# The Art of Communication

Paradoxical as it may seem, radio amateurs are in the main very poor communicators. Oxford defines communicate as "the exchange of information", that is to say communication must be a TWO-WAY exchange. Our ability to communicate "on air" therefore is unquestioned.

However, whilst attending Federal Conventions, I have often conceived the impression that the trend of discussion has been influenced through a lack of communication, both Councillors to the membership and the membership to Councillors. In this instance we must all accept various degrees of guilt.

Nonetheless, the situation can be readily rectified, by ensuring that all agenda items for the Convention are received in sufficient time for inclusion in the January or February issues of Amateur Radio. This would then allow all members to analyse the agenda items and where they felt that they can constructively comment, either for or against any item, communicate those views to the Divisional Council or Federal Councillor.

It is imperative that the views of the membership be solicited and injected to Federal Conventions to ensure a more democratic deliberation, on the matters before the Convention. The time to instigate the submission of an agenda item to your Divisional Council is now.

Let us all unite and COMMUNICATE proficiently on the implementation and amendment of policies governing the direction and administration of amateur radio both nationally and internationally.

COLIN HURST VK5HI,  
VK5 Federal Councillor.



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The Apollo 13 Disaster	Colour	1 hr. 20 mins.
The Signal to Noise Story	Colour	45 mins.
Microcomputers	Colour	50 mins.
Microcomputers	Colour	10 mins.
Winning Foxhunts	Colour	45 mins.
Auxiliary Battery Charging	Colour	30 mins.
VK5RTV ATV Repeater	Colour	1 hr.

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For a full catalogue listing of WIA videotaped programs and a complete description of the services provided, refer to Jan. 1980 issue of Amateur Radio.

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# WIA NEWS

A meeting of the Joint P. and T./WIA Committee was held on 21st May. A great many subjects were discussed but few could reach finality.

The new Handbook is now available. Another sample paper of 50 AOCIP questions will be issued by the Department soon. The WIA asked what in the Handbook should not be subjects for examinations — one example constantly quoted is Repeater conditions (paragraph 5.11). A list was promised for early June.

Copies of the Handbook can also be obtained from your Division or from Magpups — see advert.

As stated before, the Handbook interprets the Regulations and does not modify or over-rule them. If the Regulations change so also the Handbook must be changed. The new WT Act still appears as far away as it ever was.

Stating your equipment, or intended equipment, is no longer a requirement on the licence application.

The Department is still examining the request by the WIA to reserve WIA to WIZ call sign suffix blocks. The Department is issuing special out of series suffixes as RAN and SAA. Special prefix requested for 1988.

The Department felt a need to re-examine the theory syllabuses not only to spell out some subjects in greater depth but also to include some items not previously dealt with (e.g. simple treatment of ICs). A joint review is scheduled to early June.

Procedure when amateurs possess equipment capable of power output greater than permitted was also raised by the Department but WIA drew an analogy to motor vehicles and speed limits. It must be obvious that if amateurs possess such equipment it must be operated in accordance with the Handbook or they must expect special attention from Departmental officers and others, together with running the risk of causing interference, etc.

At a meeting of the Executive on the following day much time was occupied with various organisational affairs, including the appointment of the various Federal Chairmen of Committees or other officers (virtually unchanged) and secretarial or office arrangements and procedures. A copy of the new ARRL amateur radio film, "World of Amateur Radio", has been obtained and Divisions can now obtain videocassettes of this from the Federal Videotape Co-ordinator.

A submission is to be prepared for the P. and T. Department's "Review of Citizens' Band Radio Service Policy" on matters likely to affect the amateur service. This submission is expected to include a re-statement of WIA policies adopted over several years. See Amateur Radio, October 1974, page 8; January 1977, page 4; February 1977, page 4; June 1977, page 5. These policies are as fresh today as when they were adopted.

## 1980 CALL BOOK

This edition is now being finalised. There are a great number of changes and additions since the 1979 edition. Supplies should become available next month or early in September. If you want any changes to your call sign, address, etc., it might be possible to include them in the new Call Book even at this late date.

## QSP

### MONEY ORDERS — SUBS (ETC.) PAYMENTS

Did you know it costs you 60 cents to buy a money order for \$2 amount and over? It costs us another 50 cents if we have to cash it through a bank account. Postal notes have of course been discontinued.

Bankers will issue bank cheques for less than it costs you to buy a money order. If you send money this way have the cheque made out to "WIA" or "WIA ..... Division", whichever is appropriate. Although it is cheaper to pay in hard cash it is better not to send cash through the post.

### TV Rf INTERFERENCE

"For many amateurs the interference radiated from nearby colour television receivers continues to represent a considerable handicap to weak-signal operation. The prospect of a further, significantly more powerful, source of interference from millions of consumer equipments is thus something of which we should take careful note (microwave opens is one current item of concern) and, if possible, join with other sufferers in trying to persuade manufacturers and authorities to mitigate the worst effects." —TT in Radio Communications February 1980.

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## AR

A change of printer has been finalised and thanks must go to our previous printers for their work on the magazine since July 1975. As the change made in April 1973 from letterpress to sheet offset was dictated to some degree by increasing costs so the change now from sheet to web offset is primarily for financial reasons.

The Executive wishes to acknowledge with grateful thanks the following donations to the WARC 79 fund received via the VK5 Division:—

VK5ZIB	\$20.00
VK8NHT	\$8.00
VK5NMY	\$5.00
VK5IT	\$25.00
L50456	\$20.00
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YMCA Electronics Club	\$17.90
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### DIXIE NET

VK amateurs are invited to join the "Heart of Dixie Net" on 26277 kHz at 0100Z on Fridays and at 1900Z on Wednesdays. The latter net of 1900Z is controlled by WD4ENZ, XYL of WD4ENY, who controls the net at 0100Z.

### 1980 SEANET CONVENTION

This year is the 10th Seanet Convention to be held in Manila 28th to 30th November, 1980. How about fitting this into your holiday cruise programme? For details write to DU1JJT, C/- PARA, Box 4083, Manila 2801, Rep. of Philippines.

# Amateur Radio for the Cruising Yachtsman

By Eddie Rooms VK4AER-MM  
C/- Yacht "Assegai"

## INTRODUCTION

This article is in two sections —

The first section deals with the author's description and his findings whilst cruising aboard his yacht "Assegai", together with some installation procedures of amateur equipment in sailing vessels.

It makes very interesting reading and is geared more towards the boating enthusiast.

Amateurs will no doubt skip over the basic amateur radio terms quoted, but nevertheless makes us realise how little the general public knows about our hobby.

The first section only will be published in "Modern Boating" magazine in the near future, and the copyright is held by Modern Magazines, 15 Boundary Road, Rushcutters Bay, NSW 2011. Our thanks to Modern Magazines for allowing us to publish the article exclusively in "Amateur Radio".

The second section will be published next month, and gives the author's personal comments on how the WIA may improve its service to amateurs, and increase general interest in amateur radio.

We suggest readers give serious thought to these comments, and let your Division know what you think. (Letters to the Editor are always welcome, too.)

The possibilities here are boundless, but it requires the personal backing of the Australian radio amateur.

Here now is part one. I hope you obtain some benefit from the article.

(— VK3UV, Managing Editor.)

## PART 1

The tremendous advantages of amateur radio as a communication media for cruising yachtsmen are not well known to Australian sailors. The following information will be of great interest to anyone contemplating foreign cruising, especially if they are thinking of fitting radio equipment, but are deterred by the high cost of marine single sideband equipment and the limitations of marine VHF.

"Assegai" has now done over 25,000 miles cruising throughout the South Pacific and the Australian coast. We have visited New Zealand, Austral Islands, Tahiti, Tuamotus, Marqueses, Suvarov, American Samoa, Tonga, Fiji and the New Hebrides over a four year period.

We left Australia with normal, type-approved marine radio as used in racing yachts in Australia. Now, like scores of other cruising yachtsmen, we realise the tremendous advantage of having amateur radio equipment aboard. Most foreign yachts that have radio, have SSB high frequency amateur transceivers of the type used by radio amateurs all over the world. They use it to keep in touch with friends ashore and afloat, contact a doctor, get parts to remote areas in an emergency, report their positions while on telephone calls\* to home, obtain weather reports and any information required other than business or commercial traffic.

\* Uses of course depend on nationality of licence and extent of third party privilege, if any.

Amateur radio can handle emergency traffic for yachts and radio amateurs are organised to do just that.

There are countless examples of it saving lives at sea but they all have one thing in common. With this type of equipment, the yachtsman can communicate not only with radio amateurs but also with emergency services such as the US Coastguard, military vessels and aircraft and commercial ships. The Australian yachtie may ask what point there is in being able to contact the US Coastguard if, for example, he is near Fiji. To state the obvious, the US Coastguard have telex and will raise Nadi search and rescue for him.

It is difficult for those without amateur radio on their yachts or experience of it to realise that it gives the yachtsman world-wide communication, and contacts all over the Pacific from Australia to the US or anywhere in between can be expected night or day.

In 1976 the C&C 61, "Sorcery" was rolled and dismantled in the North Pacific. It was a Mayday situation involving injured crew. A 200 watt Atlas amateur transceiver had been installed and with a 20 foot wire strung along the deck, the operator was able to contact a ham operator in Alaska, several hundreds of miles away. The 14 MHz band was used. Amateurs in Hawaii and Seattle joined in the frequency along with the US Coastguard. A nearby Danish freighter overheard and altered course to join the "Sorcery" until a Coastguard cutter arrived to take her in tow. Incidentally, the amateur aboard "Sorcery" was a woman and the Alaskan ham contacted her hus-

band in California by direct phone patch. By this means, she was able to speak direct to home from the stricken yacht.

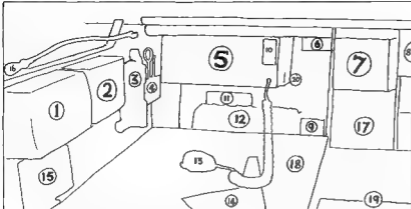
At Elao, an uninhabited island in the Marqueses, French Polynesia, a seriously injured man was rescued from a ravine in rugged country thanks to amateur radio.

One of the three yachts there at the time had amateur radio and the skipper, Steve WB6MMW, contacted Alaska and the Pacific Maritime Mobile Yacht Net. The net relayed the emergency situation and information to Nuku Hiva, the nearest main centre to the accident. We took the medical team the 80 miles on "Assegai".

A 36 foot yacht "Aburah" from the US had a medical emergency while it was in the eastern Pacific near the Central Americas. One of the crew was suffering from appendicitis, so the owner, an amateur, contacted an amateur club station in Panama. A C130 aircraft with a surgeon and two paramedics located the yacht using the amateur frequencies. The co-pilot was an amateur operator. The critically ill crewman was successfully treated aboard the yacht.

On the international amateur bands there is always someone listening somewhere. Because of the wide range of frequencies and the fact that these frequencies are shared by amateurs world-wide, a cruising yacht can go anywhere, even to the South Pole, and still keep in contact with other yachts and shore stations.

In fact, "Solo" recently did so on her trip to Antarctica. For most of the trip she was out of range of the marine fre-



Key to Photo No. 1 (Cover Photo) and No. 2: Navigation and Radio Area on a Cruising Yacht.

1. Brookes and Gatehouse "Harrier-Hermes" electronic ship's log and speedometer shows speed and distance in knots and nautical miles.
2. Brookes and Gatehouse "Homer Heron" Model C radio direction finder receiver. A superheterodyne receiver designed principally for long wave RDF aeronautical and marine non-directional beacons. Also receives broadcast band and 2-4 MHz marine band. Operates from ship's aerial or from (3).
3. Hand bearing compass integral with tuned ferrite rod antenna for ascertaining position lines by finding the "null" point of a non-directional beacon. With an experienced operator position lines accurate to 2° can be achieved.
4. Pencil rack, dividers, etc.
5. Atlas model 350XL DR Mk. II HF SSB transceiver. Covers all bands 160-10 metres inclusive and operates on 12-14V DC ship's batteries. 350 watt PEP input transmitter section with four CD-2545 output transistors and all solid state circuitry. Single conversion

- receiver with 5595 kHz IF and double balanced diode ring mixer. Operates CW 500 kHz wide) or USB or LSB. Has digital readout and analogue readout.
6. Asahi twin meter, SWR and PWR.
7. (See photo No. 2.) Unique Transmatch antenna tuner. Provides continuously variable LC combination as well as a T network for coax fed antennas. Will match long wires or coax antennas to any frequency 1.7 MHz-30.00 MHz. Can handle 1500 watts output power. It makes use of a 600 pF air variable capacitor, three 68 pF ceramic capacitors (selectable by jumper bars at the rear) and a continuously variable 0-28 micro-Henries roller inductor. Four networks are available and SWR when feeding the backstay aerial is always 1:1.
8. (See photo No. 2.) Barker and Williamson model 590G coaxial change-over switch selects either of two feed points on base loading coil of backstay or Scaler SC HF whip system. Dipole can be plugged in to spare outlet for in-port operation. Backstay

aerial is a 5/8 wave vertical on 20 metres and gives very low angle of radiation and about 3.5 dB gain over a half wave dipole. Radiating section is 41 feet long approximately and its top is about 43 feet above the water. A base loading coil of 16 turns of 3/8 in. copper tube is fed for resonance on 80 metres, but its greatest efficiency is on 20. Coil is 4 in. in diameter and grounded for the ship's ground plane and the sea. Although technically it should not the vertical works well on 15m when feeding the 80m tap thanks to the tuner

9. Stowage for British Post Office style brass CW key. In times of bad QRN CW could save the ship and her crew so some practice is always worth it for a maritime mobile amateur.
10. Auxiliary VFO on Atlas 350XL allows duplex operation.
11. Field strength meter for antenna tuning tests.
12. Pilot books and other navigation publications.
13. Shure 404C hand-held microphone.
14. Brooker and Gatehouse "Hurst" plotter for laying off courses and bearings on chart.
15. Brooker and Gatehouse short wave converter for Homer/Heron receiver allows 2.5, 5, 10 and 15 MHz crystal locked reception of WWV and WWVH. The Atlas 350XL also covers 5, 10 and 15 MHz WWV, making two fine signal receivers for celestial navigation purposes.
16. Flexible chart light.
17. Navigation books.
18. Chart table lid hinges up. Chart stowage bin underneath.
19. Navigation seat is actually head of his quarter berth.
20. Mounting cradle for Atlas 350XL allows quick removal of transceiver from boat and has power supply, antenna, mike and external speaker connections.

quencies and used amateur radio for communication with Melbourne, Mawson and even the pilot of a Qantas 747 with friends and relations aboard.

#### TYPES OF AMATEUR RADIO EQUIPMENT

There are two main kinds of commercially made amateur radio equipment. These are high frequency single sideband transceivers for the amateur bands from 1.8 MHz to 30 MHz and VHF equipment covering amateur frequencies above 30 MHz. Like marine VHF, the latter provides line of sight propagation over 50 to 75 miles. However, automatic repeater stations located at high points along the coast receive a signal on the VHF 2 metre band, amplify it and re-transmit it. Thus with low powered amateur VHF equipment and a short 19 inch masthead antenna, contacts can be maintained while coastal cruising.

However, the high frequency amateur transceiver is the best choice for an off-shore yacht. These sets are capable of communication from 0-25,000 miles, or from Australia to England. A workable antenna can be the boat's backstay or a suitable whip aerial. The higher the frequency the easier it is to install a resonant antenna. This is one of the big difficulties in using 2182 kHz 2524 and 2284 aboard small vessels.

#### FREQUENCY COVERAGE OF HF AMATEUR TRANSCIEVERS

These sets have variable frequency oscillators (VFO) and are not crystal locked like marine SSB. The VFO allows the operator to move up and down any 500 kHz segment of the various amateur bands.

The most useful bands for the long distance and coastal cruising yacht are 80,

40, 20 and 15 metres. The operator simply selects the frequency suited to the distance required.

A big advantage of amateur radio for the foreign going yacht is that these bands are shared internationally and the problem of fitting and tuning appropriate frequencies on a world or Pacific cruise never arises.

#### PROPAGATION, RANGE AND COMMUNICATION CAPABILITY

With marine SSB the yachtman is restricted to fixed 2 MHz, 4 MHz, 6 and 8 MHz crystal locked channels. On these, casual conversation is prohibited. This is all right for purely coastal cruising work and for working OTC coast stations and weather services. There are limitations to this, as for example, if you are between Suvarov and Bora Bora, you will be very

lucky to be heard on 2182 or 6215.5 kHz. There are no radio relay vessels around those parts. Foreign countries don't share most of the Australian small ships frequencies and very few cruising yachts have them.

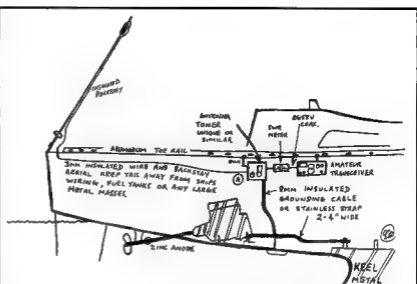
In a yacht race around Tetiaroa atoll in French Polynesia, we were asked by the organisers to report any sightings which were unusual as a local yacht was reported missing. On seeing a red flare, "Assegai" and "Tentation", the only yachts with marine radio, reported to Mahina Radio, Tahiti, on 2182 and their 8 MHz working frequency. There was no answer and we were assured on good authority that the listening watch is only sometimes kept. This situation is not uncommon in other parts of the Pacific. If you are going cruising don't expect the kind of outstanding service that the OTC or Auck and Radio provides for small ships.

With Amateur HF SSB, as already stated, you can have world-wide communication capability from aboard a cruising yacht. Sophisticated antenna systems such as yagis beams are not necessary and an efficient aerial can be worked into the boat's rigging.

Due to their ability to make best use of ionospheric skip, amateur radios make CB radios seem like mere toys. High power allows great flexibility in antenna systems and HF amateur sets have many times the range of marine SSB. One simply selects the band suited to the distance required. In practice, most yachts use 20 metres for long range and either 40 or 80 for closer range. A 20 metre signal from Melbourne would bounce right over Sydney, but be clearly heard in Tahiti or Los Angeles. Communication between Tahiti and Vancouver, mid-Tasman and Fiji or Auckland, Japan and Sydney, England and New Zealand, Cairns and Melbourne, Hawaii and Bass Strait, Bass Strait and Melbourne, Melbourne and Geelong, etc., etc., can be expected with reasonable reliability with only an elementary knowledge of propagation. The amateur bands are international which means one can communicate with other yachts or amateurs from other countries. Distance is irrelevant.

About 70 per cent of US yachts and 30 per cent of Canadian yachts have amateur radio equipment aboard. There are very few New Zealand and Australian yachts with it but the number is certainly increasing. When properly set up it is definitely the most reliable form of communication for the foreign going yacht. An ocean racer with it aboard has a better communication capability than the radio relay vessel. "Solo" took a 200 watt Atlas to the Antarctic, "Klados" has an Atlas 350 XL. A Costa Rica yachtsman who sailed a "470" from the Galapagos to the Marqueses also had an Atlas.

Most of our friends on cruising yachts have either Yaesu or Atlas equipment. "Assegai" has an Atlas.



**FIG. 1: LONG WIRE BACKSTAY ANTENNA — THE SIMPLEST INSTALLATION FOR MULTIBAND OPERATION**

Total length of antenna can be any length if a good tuner is used. The Unique is recommended since it will match ANY frequency 2-30 MHz to a long wire. Wire from the tuner should be as straight as possible without any kinks, twists or sharp bends. This antenna set-up is unsuitable for a steel boat. Transceiver and tuner chassis must be grounded.

Tune long wire for lowest SWR and highest forward power on meter.

**INSULATED BACKSTAY:** Use AYF approved swaged insulators. Section between insulators to be as long as possible. Bottom end of antenna (Point A) connects to "single wire" terminal of tuner. From "A" to top insulator if close to 85 feet (a full wave length on 20 metres) will match well on all bands with a good tuner.

#### **BRANDS AND PRICES — HF, SSB**

**AMATEUR RADIOS**  
It is best to use a brand which provides output in the better than 100 watt PEP range. The most popular brands on cruising yachts are Atlas 210 X, 215 X and Atlas 350 XL, Yaesu FT 101E and FT 101B, the Kenwood TS 520. All of these can be operated from a 12 volt battery. There are dozens of other brands such as Swan, Drake and Heathkit. Prices vary, but a general rule is that amateur gear is about half the price of marine SSB for the same output. For around \$900 one can have a 100 watt PEP output set covering the amateur bands. An antenna tuner is most desirable in order to match the backstay or other aerial to the wide range of frequencies as is an SWR bridge in order to monitor antenna match. Tuners vary in price from about \$100 to \$400 and an SWR bridge costs about \$30.

Contrary to what many yachters think one need not be an electronics wizard to operate a set and many brands are designed to be "idiot proof", particularly the Atlas and Drake. The market for amateur equipment is very large and world wide. It is very competitive and a good brand is very reliable. It is quite common for a manufacturer to sell many thousands of one model.

The all solid state types are best for maritime mobile amateur use as they are

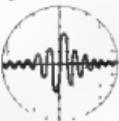
physically smaller and do not have valves, thus being less susceptible to vibration damage. The use of transistors instead of valves in the final output stages of a set does away with the need for heating elements which demand more battery power before the set can go into transmit mode.

#### **NET OPERATION**

A valuable service to the yachtsman cum amateur radio operator is the use of "nets" by increasingly large numbers of both land based and maritime mobile ham operators.

What then is a net? A net is comprised of a group of amateurs who meet at a specific time (either daily, weekly or whatever) and a specific frequency in order to share a common interest, pass on traffic or contact other amateurs. Nets are run by a net controller who is always strictly voluntary and who is usually assisted by various relay stations. The members check in with the controller to let him know they are listening either to help out with information or look for a friend should he come up on frequency. Should any two stations or group wish to have a more private QSO they simply move off the net frequency, for example up or down 10 or 15 kHz and carry on their QSO without holding up the net traffic on its pre-arranged frequency. In a well run net very large volumes of traffic can be

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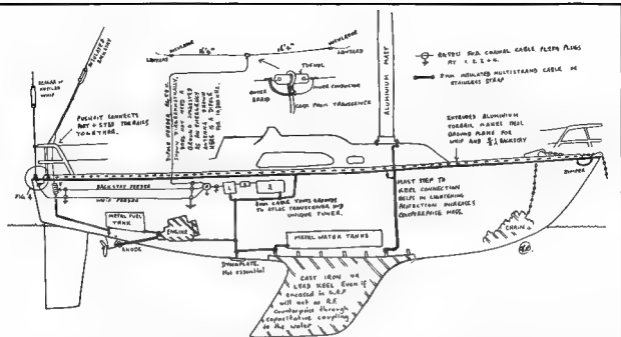
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## FIG. 2: ANTENNA AND GROUND SYSTEM ON "ASSEGAAI"

**LEGEND:**

1. Antenna tuner. Unlike recommended as it has continuously variable inductance/capacitance capability.
2. SWR and power meter in RG58U coax line, e.g. Asahi MF-11X or Toyomoter YM-1E.
3. Amateur Transceiver. At least 100W PEP output recommended. All solid state preferable. 12-14V DC.
4. Coaxial changeover switch selects antenna.
5. Copper loading coil for base loaded backstay. Coil is fed for resonance at desired frequency. Backstay length from 5. to top is critical (see Ham Books).

(DC Cables omitted for clarity)

The net is now run by a New Zealander named Noel ZLIGU in Auckland. He carries on the work of recording yachts' passages and arrivals, emergencies are relayed directly to the relevant authorities and are also broadcast to a persons who could help. Medical traffic is given priority as is Mayday traffic. The American Amateur Radio Medical Service can be brought on frequency at any time by phone in Hawaii. This means the doctor himself speaks to the patient at sea. The US Coastguard has a frequency in the same amateur band and its helicopters worked in conjunction with "hams" in the "Sorcery" incident in the North Pacific. The net has communications capability extending well beyond the range of coast radio small ships service, which was never designed for international cover. If Australian Coastal Surveillance, Canberra, wants to find a yacht in the Pacific or Indian Ocean, it asks Noel in Auckland to put over a bulletin on its behalf.

There are other nets. Some are big and more formal like the Pacific Maritime Mobile Net, while others are small, informal and more localised, comprising of only a few friends in the Fiji area for example.

Examples are: Atlantic Maritime Mobile Service Net, Jerry's Net for Canadian yachts and friends in the Pacific area "The 40 Metre Net" covers mainly French Polynesia, "Earl's Net" mainly for US yachts out of Southern California. The 15 metre net is another. These are all maritime mobile nets. There are many, many others designed for land stations, such as the Pacific Inter-Island Net, which is large and handles traffic for Americans and others in Pacific Island territories.

handed. The most useful net for the cruising yachtmen in the Pacific Ocean, China Sea and Indian Ocean is the Pacific Maritime Mobile Yacht Net. It was founded by an amateur named Robbie YJ8AN. Robbie would be there every day, 365 days a year, at 0530 GMT, 14315 kHz ± QRM. This was in 1973, and because of the tremendous range of his signal from the New Hebrides, distance was irrelevant, thus enabling Robbie to receive and reply to yachts checking in from thousands of miles away. These included yachts from Tahiti, Hawaii, Vancouver, California, the Caribbean, Guam, Pago Pago, Cairns, Bay of Islands, New Zealand, Fatu Hiva, Pitcairn, Manihā Atoll, Yasawas, Isle of Pines, Antarctica, Timor, Okinawa, Kodiak and on passage all over the map. Robbie was nicknamed "Mickey Mouse" after MM for Maritime Mobile, the official term for an amateur station operating outside territorial waters.

Scores of people tuned in to listen and work this most interesting guy, who could pass an extraordinary amount of traffic in the hour or two after 0530 GMT. The Mickey Mouse Net was later run by Ted

VK4AEM, from Caloundra, Queensland, Ted ran the net efficiently and like all radio amateurs kept a log. Furthermore, he plotted the positions of boats making passages on a large blackboard after they had checked in. About the only time he became annoyed was when yachts which had checked in while on passage failed to notify him on arrival at their destinations. Yachts which checked in on a regular basis and failed to do so over several days were "called" by Ted to ensure all was well on board. He also arranged schedules between yachts, noted when particular yachts would be up on frequency again and many other details, such as an alert for a stolen yacht. US Coastguard and Marine Operations Centre, Canberra, have contact with this net.

The Maritime Mobile Net over the years has involved more and more yachts, and amateur radio operators who are primarily concerned with the welfare of "yachties", who have been and are able to check in on the 20 metre band. Emergency, priority and medical traffic are all handled at the beginning of the "net" when the frequency is left open for a reasonable amount of time.

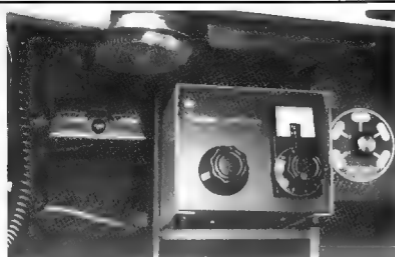


PHOTO 2 (left): SWR Bridge, unique transmatch antenna tuner and antenna selection switch. Alas 350XL is to the left — see key diagram.

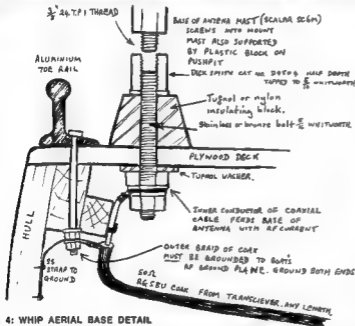


FIG. 4: WHIP AERIAL BASE DETAIL

**NOTE:** It is very important that a whip has a good ground plane from which the RF signal will be reflected into the ionosphere (see Fig. 3). The aluminium toe rail, life lines, pushpit and pulpit, when connected to the water, are perfect. Keep the whip low and close to the water.

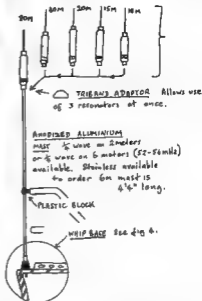
#### MAYDAY TRAFFIC

I should point out here that it is not necessary to wait until a net time if you have an emergency situation. With amateur radio equipment aboard which is properly set up, the yacht'sman can expect to contact someone, somewhere. There are always thousands of amateurs listening all over the world. Remember that if someone is talking, there will be someone listening. Call as soon as he stops talking or before he does and either he or his contact will hear you. Amateurs are obliged by law to

handle Mayday and Pan traffic. Loss of the licence would be the result of ignoring this law. Amateurs can be found in your own home town. They are on islands, on yachts, in private and commercial aircraft (The DC10 has a 14 MHz amateur frequency), commercial ships, military bases, Scout camps, technical schools, US Coast-guard stations and vessels. There are 20,000 amateurs in California alone and nearly 13,000 in Australia.

#### WHAT IS A PHONE PATCH?

Amateurs in certain countries, notably



**FIG. 3: MULTIBAND WHIP SYSTEM**  
RESONATORS with adjustable tips. One for each band screws to top of mast. Marine band resonators are available to order. An SWR bridge has to be used to adjust the tip to resonance in order to gain maximum effective radiated energy. High SWR will result in very low power transfer to the whip (see table four). Resonators are colour-coded and cover the whole band to which they apply. They are small and easily removed for storage.

**NB.:** It is essential that the base of the whip be close to a good ground plane such as toe rails, life lines and pushpit. They should be grounded to the sea. Keep the whip low as at HF a large proportion of the signal is bounced into the ionosphere from the ocean's surface.

USA and Canada, but not Australia, UK and New Zealand, have a device called phone patch. This enables them to relay telephone traffic through their amateur radio equipment. An example will show how it works. A yacht's skipper with a VE7 call spoke from his yacht which at the time was near the island of Raiavasa in French Polynesia, to his wife in Toronto on the telephone via a VE7 ham in West Vancouver. They arranged to meet in several days at Tubuai airport, also in French Polynesia, but 100 miles from the yacht. The skipper had regular skeds with the Vancouver amateur, who simply made a collect call to Toronto while he was on frequency. Note that French Polynesia no longer allows phone patch traffic from

yachts within 70 miles of any of its islands but patches from a high seas location are legal. The Canadian and Americans make many similar situations possible and international third party traffic is legal for them. Australian amateurs would lose their licences if they did the same thing, and an American would be in trouble if he passed third party traffic for an Australian amateur. It is in order, however, for an amateur aboard a yacht to speak with mutual friends in another amateur's radio room. It is also quite legal for a yachtie to keep skeds with a land based amateur. There are many amateurs in NSW, Victoria and Queensland who keep private skeds with Australian yachts while the vessels are on passage or just relaxing at anchor.

# INSTALLATION

All too often, radios are not well set up on boats, despite the fact that another installation is an easy matter when a few basic principals are followed. Three things need to be considered

1. Location of the transceiver and its power supply.
2. The antenna system
3. The ground system.

If a vessel is properly designed, there will be a dry place away from salt spray and possible surging bilge waters in which to install the radio. This is usually at the chart table which is a handy position for the operator. It may also be beside a settee berth in the main cabin. "Assegaa's" radio is located at the chart table and we have plastic screens which roll down over the radio and antenna tuner in case of water finding its way over the spray dodger which covers the main hatch.

It is very important that the heat sink fins on the solid state equipment are in a well ventilated position to enable proper cooling of the output transistors. The power cable running to the batteries should be as short as circumstances will allow in order to minimize voltage drop. The cables should be double insulated 2.5 mm to 3.5 mm multi-strand and they should go direct to the battery with a fuse or circuit breaker in the battery end of the run

## THE AMATEUR LICENCE AND HOW TO GET ONE

As is the case with all radio equipment, one requires a licence to operate an amateur transceiver. Full details of requirements are available from the Radio Frequency Management branch of the Posts and Telecommunications Department in capital cities or also from any radio inspector's office in provincial centres. A great deal of material such as past exam papers is free for the asking. The Department conducts exams every six months in major centres. Most radio inspectors are very helpful and will advise you as to the best study courses in your area, run either by the local technical school or radio club. Correspondence courses are available from the Education Service of the NSW Branch of the Wireless Institute of Australia at PO Box 123, St. Leonards 2055, NSW.

The WIA also sells excellent morse code instruction cassette tapes for only \$3 each. It has offices in all States and welcomes enquiries from people interested in amateur radio. It is the official arm of Australian radio amateurs and represents them not only at a Federal but also on a world level. Morse code practice is broadcast by its stations VK2BWI and VK5WI

in the 80 metre band on 3550 kHz between 7.30 p.m. and 9.30 p.m. every night of the week.

There are three levels of licence. AOCIP — Amateur Operators' Certificate of Proficiency.

AOLCP — Limited Amateur Operator's Certificate of Proficiency.

NAOCP — Novice Amateur Operator's Certificate of Proficiency.

AOCIP or NAOCP are the best certificates for the cruising yachtsman. The AOCIP or "full call" allows use of all amateur bands, whereas the novice is allowed on 80, 15 and 10 metres, which gives him access to international as well as Australia-wide communication. Morse for novice is only 5 w.p.m. send and receive, which is easy. The full call requires 10 w.p.m. morse and needs much more practice. Both novice and full call require passes at the same regulations exam, but the theory for the full is more involved. Many fully licensed amateurs have had no previous electronics background.

Novice frequencies are 3525-3575 kHz (80 metres), 21125-21200 kHz (15 metres), 28100-28600 kHz (10 metres).

The limited exam is the same as AOCIP full call but without any morse code requirement. The holder is restricted to frequencies above 52 MHz and therefore denied use of HF SSB transceivers which are so valuable to the cruising yacht. Section 92 and 93 of the Handbook for Operators of Radio Stations in the Amateur Services make it clear that an amateur station is legal aboard Australian vessels. It is the operator not the vessel which is licensed and he may bring his equipment aboard. The owner of the yacht need not be the operator and the station is legal in foreign territorial waters or on the high seas. A station in this situation is maritime mobile and would have a call sign as follows — VK4AER/MM. The VK refers to Australia, the 4 is the State of Queensland, the operator's normal home State, AER is the amateur's call letters, while the MM refers to maritime mobile.

Many Pacific Island countries will issue call signs for a small fee to foreign yachts, but these calls are to be used only while the operator is in the territorial waters of the countries concerned. They are not valid for other areas. It is advisable to have a call sign and licence before going cruising.

I hope that this gives you some idea of what amateur radio means to the cruising yachtsman. I'll say 73 at this point and catch the Pacific Net as it is nearly 0530 Zulu and an old friend Ian WA6DNV, who is maritime mobile and approaching Chile, will be checking in with Noel ZL1CU in Auckland. It will be interesting to see how Ian's current cruise is going.

Good luck and good sailing.

END PART ONE.

Part 2 continues next month. ■

TABLE 1

Some Amateur Maritime Mobile Nets

Net	Time GMT	Net Control	Frequency kHz	Coverage
Pacific Maritime Mobile Net	0530 daily	ZL1CU Auckland	14,313	Total Pacific area via relays
DD Net (Doers, Duffers & Dreamers)	0400 daily	VE7CEM Vancouver	14,116	Eastern and Central Pacific
The "15 Metre Net"	2300 wk. days only	Various	21,404	Pacific area
*Pacific Inter-island Net	0800 daily	Usually a Guam station	14,313	Pacific area, especially U.S. possessions
UK Maritime Service Net	A new net. Time as yet unknown to writer but control is UK station		14,313	Atlantic area for cruising out of UK and Europe

\*The net for handling traffic and contacts between many Pacific Islands and mainland USA, but US yachts often use it for phone patch traffic and contacts with home. Other Maritime Mobile are welcome.

There are many other nets which will also handle maritime mobile check-ins. Examples are the South East Asia net, the Seafarers Net, Tony's Net, the Coral Coast Net, the 40 Metre Net.

# A Decade in Review

## The Expanding World on VHF in the 70s (Part 2)

This month we present Part 2 of an article by our VHF/UHF Sub-Editor, Eric Jamieson VK5LP. The last few years have brought excellent conditions to the VHF/UHF orientated amateur and readers will recall some of the highlights presented with a wish that such good conditions prevail in the future.

### JANUARY 1976

The Mt. Gambier 144.65 beacon under construction. (What happened to it?)

EME VK2AMW to K8UQA on 432 on 27-10. During WA6LET tests on 432 VK5NC, VK5MC, VK5QR and VK3ZUR copying signals.

VK3ZAZ trying skeds to C21 around 1900Z — MS to equatorial regions?

A ZL trying to get vertical polarization on 2 metres standard for all modes!

AMSAT report that rare stations like 4W1ED, ZB2BL, TU2EF and FY7AS being worked via Oscar 6 and 7 in Europe.

### FEBRUARY 1976

Report on northern VK4 2m activity.

VK4UX reports JAs for the first time this cycle on 10-12-75.

VK4UI worked C21KM/MM via Gold Coast repeater (C21KM 250 km out to sea!).

VK3ZAZ says to turn your power down with strong signals around. Quote, "It is proven that long haul DX only appears October-November and March-April, with slight exceptions".

2 metre SSB really active with those IC202s getting into the act.

### MARCH 1976

VK8GF has 2 metre SSB.

Large tropo openings between VK3, 5 and 6 during December and January.

VK5PB and VK8XY set world RTTY record on 144.08 on 1-1-76, distance 1,170 miles.

VK5ZK worked VK6XY on a Ken handheld on Ch. 40 same date.

VK4ZRF 5 x 9 on 6 metres with his 20 mW. Very little AM on 6 in 75-76 season.

### APRIL 1976

Mt. William goes to Ch. 7.

EME, VK2AMW contacts W1SL, K0TLM, W0YZS and JA1VDV on 432 during January 1976.

During December 1975 contacts to W9GAB and K2UYH. On 144 EME VK5MC worked WA7BJU and W4WNH/8 February. Suggested 70 cm band plan to remove EME QRM troubles.

Also a 144 MHz band plan — seems the explosion of IC202s has really given SSB a lift.

Proposed beacon plan from VK3AQR.

### MAY 1976

More overseas beacons appearing in the listing. Brisbane VHF Group have a beacon

on 432.4 running 10 watts to three half-wave dipoles.

VK4UX reports more JA contacts during March 1976.

Increased numbers of IC202s, some backed up with 6/40 linears.

### JUNE 1976

Details of Malaysian VHF allocations.

JA activity to VK4 good during April with all afternoon openings.

Five Rockhampton stations with 2 metre capability.

EME VK2AMW to JA1VDV, F9FT and hearing VE7BBG, I5MSH, VE4JX, SM5LE and ZE5JJ in March! VK5MC worked W6PO and WA2BIT on 144 EME. A list of 13 stations worked on 144 MHz EME by VK5MC with following statistics: 7 using 8877s, 5 using two 4CX250Bs and 1 using 3CX1000A1. Almost all using U310s as preamps as well.

### JULY 1976

VK7 432 beacon receives approval to operate 432.475 MHz.

VK5SU leaving Ceduna for Moree, NSW.

WA6LET signals heard by many during May EME tests.

No JAs into Brisbane during last equinox.

### AUGUST 1976

More on VK7 432 beacon: using bi-directional antenna and 20 watts output.

VK4RO, VK4JH and VK4MS have 432 gear.

VS6BE and KG6JDX being worked from Japan.

JA1VOK looking for 144 MHz TEP contacts to VK.

WA6LET worked W3CCX, WB7BST, VK3ATN, JA9BOH and W9WCD on 24-6 via EME.

### SEPTEMBER 1976

Mid-winter Es between VK4, 5 and 7 on 12-6 on 6 metres.

Gold Coast have operational UHF repeater on 433.225/438.225.

Possibility of Chatham Is. being active on 6 metres, population 600 people, 50 chickens, 4 dogs and 2 amateurs!

VK2AMW to W1JAA (ex WF6ZJ) on 5-6 via EME. W3CCX going portable EME to Columbia, South America, on 432 MHz.

### OCTOBER 1976

VK6ZDY and SMIRK reported Northern Hemisphere DX looks interesting.

VK2ZAY lists some 14 stations worked during winter Ea.

VK5SU/2 (now VK2BXT) had his first 6 metre contact from Moree to VK7ZGI on 6-7-76 using 40 metre dipole! VK2DY active from Moree on 2 metre SSB

ZLMB reports 8 metres poor out of Dunedin last season with only one contact to Hobart.

Advice offered to keep ears on 50 MHz more often.

### NOVEMBER 1976

The beginning of a lot of historical contacts. VK6WG to VK6KZ/P crossband 1296.8 to 146.0 over 10 km on 8-9-76. VK6WG used 3CX100A tripler to 36 inch dish, mode AM. VK6KZ/P using 12 inch electric radiator reflector and diode mixer converter to Barlow Wadley!

Report on VK7ZYT 144 MHz linear using popular combination of 2N5590 driving two 2N5591 to give 50-60 watts.

### DECEMBER 1976

JA arrives to VK3 and VK7 on 23-10 with VK3BIZ working 14, VK3AKK 11, VK7JV 9, VK3AMK, VK3ZRY, VK3ZSJ, VK7JG, VK7ZAH each 5, etc. VK3BIZ reports working RA0CCB crossband to 6 metres.

Report that ZL1VHF beacon on 145.1 copied by K6JQS/KH8.

KG6JDX running beacon on 52.050 from 0800 to 1000Z beamed on Australia.

VK2AMW via EME worked LX1DB on 26-9, K8III on 21-7-76.

### JANUARY 1977

Six metres off and running again. YJ8KM most popular, first contact to VK4ZSH on 1-11-76 and to VK1, 2, 3, 4, 5 and 7 during November. All ZL areas being worked in VK1, 2, 3, 4, 5 and 7 and occasional VK6.

Both VK4ZCL and VK4ZKL report hearing French language telephone conversations on 144.380 MHz, possibly from New Caledonia.

P29MJ now VK7MC. VK3AKC complains of lack of VK5, Adelaide station, on 2m. Sixteen VK1 stations now on 2m SSB.

VK8ZCU hearing VS6, KH6, UA, ZL, JA, JR6, HL9, P29 and VK from Darwin!

EME report and some interesting observations at time of total eclipse 23-10-76.

### FEBRUARY 1977

2 metre Es to four States, 16-12-76 VK4 to VK5, with VK4ZRO and VK4ZNC to VK5KK, VK5GL, VK5ZBU and VK5ZRK.

6 metres and YJ8KM to Perth on 1-12-76 with good signals.

2 metre Es on 11-12 from VK4 to VK5 again.

VK4ZAZ heard VK1RTA beacon on 144.475 on 4-12. Tropo between VK3, 5 and 6, all December, on 2 metres.

JAs to VK5 on 52 MHz on 11-12. Albany beacons shifted to Mt. Adelaide, near Albany. VK6WG ready for 1296 MHz.

**MARCH 1977**

More 2 metres Es, VK4ADC heard VK7ZAE on 30-12, VK5KK heard by VK7PS same time.

2 metre Es solid copy for 45 minutes from VK1 and VK2 to VK5KK and VK5LP on 31-12. Four VK1 stations worked along with VK5NY and VK5ZPS working VK2 only, and several country VK5s working VK1MP.

VK5KK works VK1, 2, 3, 4, 5, 6 and 7 in less than 14 days on 144 MHz!

Tropo on 432 MHz to VK6WG, VK6KZ, VK6ZED, VK6ZBW from VK5KK, VK5NY, etc., on 27-12. VK7RTW damaged by fire.

**APRIL 1977**

More on 2 metres, both Es and tropo. VK7PD mobile in Ulverstone heard Brisbane repeater! VK7ZAH was heard in Brisbane exchanging reports with VK3YJL. VK7NR/M worked VK6ZDT, Wagin, via Geelong repeater on 9-2-77. Also on 9-2 UHF mobiles reported to be working from NW Tasmania to VK2/4 area between Armidale and Brisbane!

VK4ZRF, VK4ZSH and VK4ZRQ out for VK2 mid-summer field day report, no Sydney stations, but beacons audible, only Newcastle and Brisbane stations worked with temperature at 42°C plus.

VK5 ATV repeater granted a licence.

VK5OR to VK6WG contacts on 1296 MHz numbered over 8 in just one day alone in February! VK3AKC and VK3ZBJ attempt QSOs but no go. VK6WG being copied in VK5 on 1296 by VK5KK and VK5NY.

EME contacts to VK2AMW include JA1ATL, JA1VDV, K3PGP, F2TU, WB5LUA and FY2AS on 432 during December and January.

**MAY 1977**

KH6EQI heard in VK5 by VK5ZPW on 27-3-77.

VK5RO heard working a JH6 crossband 52 to 28 MHz on 20-3.

A VK3 heard WB9AK7 on 26-3, no other details.

VK82CJ (now VK8GB) reports 6 and 2 metre activity in Darwin with VK8VV and VK8ZCU active also. First JA opening for equinox on 13-3-77.

VK2ZTB reports 144 MHz TEP with LU7DZJ being heard by YV5ZZ on Oscar up-link.

Prediction of JA contacts to VK8 from Kyushu on 144 MHz via same mode as surety in light of WRE research.

General conditions of JA licencing from VK3HV.

VK9NI to become active on 6 metres.



**PHOTO 4:** Reaching for the top on VHF! VK1 amateurs installing the ill-fated Mt. Ginini repeater installation on 12th February 1977. The original repeater antenna system featured 3 bays of 4 gamma matched dipoles fed quadrature (90° out of phase).

**JUNE 1977**

More JAs and TEP in April. VK3OT works KG6APP and hearing KH6EQI on 50.110 MHz on 9-4-77.

Band open to JA for several hours from VK2, 5, etc., on 9-4 and 11-4-77.

VK5LP says Korean FM on 49.305 and TV on 49.750 very consistent.

KL7HAM active on 6 metres from Shemya Is.

VK6BV reports JA openings to Kalgoorlie on 16-4 and 19-4.

**JULY 1977**

3D2AZ's only 6 metre contact for years was ZL1Ct. Although hearing VK2WI beacon in summer had no other contacts.

VK3AMK reports great success with vertical polarization in Channel 0 areas.

VK4RO hearing KH6EQI on same day as VK5ZPW plus a few times in April. On 17-4 had QSO with KH6GRU 5 x 9, first really long haul DX for the cycle; many JAs through to VK4 and VK8.

**AUGUST 1977**

Details of JA to W6 contacts in Northern Hemisphere summer

VK82CJ and VK8VV work VS6BE on 6-6 and 7-6-77. Also VK82CJ hearing 11th harmonic on RRI in Sumatra on 51.909 MHz on 8-6-77!

VK4ZNC appeals for 6 metre gear for FK8AB.

VK8ZER/6 at Giles Weather Station active on 6 and 2 metres.

**SEPTEMBER 1977**

Announcement of the Ron Wilkinson VK3AKG trophy.

First of many pleas for use of 50 MHz in VK for coming seasons.

P29HV reports on 6 and 2 metres activity in P29.

VLSSA beacon on 48 450 MHz running 100 watts into 4 element beam pointing to JA from HMAS Coonawarra, near Darwin.

VK2AMW EME site at Dapto vandalised on 25-6-77

#### OCTOBER 1977

Reported mid-winter Es during June-July between VKA1, 2, 3, 4, 5 and 7.

KC4AAA active on Oscar 6 and 7.

Cycle 21 predicted to be a cross between Cycles 19 and 20.

VS6GG informs that all Hong Kong TV operates on UHF.

VK6NER/ZER/P6 heard VK5VF from Giles on 20-8 but no contacts

Uprise in local 1296 MHz activity

#### NOVEMBER 1977

KC6PO works JA from Caroline Is. on 6 metres on 11-9-77.

JA2BZY copying WB5LBJ/DU6 on 11-9 a.s.o.

K3ZYC worked VK2, 3, 4, 5, 6, 8 and P29 last season using 250 mW. VK4KK mentions hearing ZS1ET on MCW on 50.020 at 0700Z to 0726Z on 18-1-1948! The time looks interesting and should be kept in mind for now. Very similar to KH6-ZS6 time

#### DECEMBER 1977

Darwin well alive on 6 metres.

JA2IGY back on 52.500 MHz.

KG6 worked in Darwin on 9-10 and 11-10 by VK8VV and VK8ZCJ, the latter working WB5LBJ/DU6 on 11-10 also.

List of active KG6 stations include KG6APP, KG6DX, KG6JDX.

VK3OT worked nine JAs on 11-10. Band open to JA from VK2 and VK5 through October, but no openings in Melbourne.

Complaints voiced about credibility of information from certain sources.

#### JANUARY 1978

The occurrence of 2 metre TEP is noted for the first time in Darwin. On 27-10-77 VK8ZCJ (now VK8GB) heard JA signals on 144 MHz SSB/CW and 144.34 MHz FM. Unfortunately to miss contact with a JE2. Several letters from JA stations interested in working VK.

VK6BV and VK6ZGQ active from Kalgoolie with 52, 144 and 432 MHz.

KG6APP writes telling of HL9WI, KC6PO, JA and VK8ZCJ contacts.

JAs reported having been available to all States during last equinox

#### FEBRUARY 1978

VS8 Hong Kong allowed spot allocations on 52 025 CW and 52.100 SSB

VK8ZCJ reports the scheduling of KH6EQI beacon beam headings throughout day.

3D2CM is definitely active with 30 watts PEP into 3 element yagi! According to Dick he has a clear take-off in the VK-ZL direction

P29HV active towards VK, ZL and JA on 6 metres.

J11HHX lists at least a dozen rare DX stations in almost as many countries during last equinox on 6 metres.

P29HV looking for North Queensland stations on 2 metres.

52 050 MHz being clogged by stations working JA DX, while VK7KJ worked KH6NS.

2 metre tropo on 13-11 between VK5 and VK7.

VK5SV hearing VK6WG on 1296 MHz for 90 minutes with a HAND-HELD 3 foot dish. (Would this be hand-held portable 1296 DX?)

VK5ZPW, VK5KK, VK5MT to VK3ZQV in East Gippsland on 432 MHz 5 x 9 and 500 miles over land

On 2-1-78 VK2BXT at Moree worked VK7ZAH, VK7DA and VK7JG on 144 MHz.

#### MARCH 1978

First widely worked 144 MHz DX out of VK8, grant Es opening to VK2 and VK4, and one-way to VK5, VK8ZGF and VK5ZSH/8 worked VK4ZRO, VK2YDY, VK2BXT, VK4AZE, VK2ZAY, and VK5ZSH/8 heard by VK5ZWR and VK5KK all on 16-1-78

Report of enormous workings between VK3, 5, 6 and 7 in last tropo season

VK2ZTB reports on RS satellites.

VKOGM setting up for Oscar operation from Casey Base.

#### APRIL 1978

Two new world records in VK. VK8WG and VK5QR on 2304 MHz for contact on 17-1-78 with 5 x 9 signals, VK5QR using SSB: VK6XY and VK3ZQV work on 432 MHz to establish a new world record of 1600+ miles.

New 144 MHz record to LU5DJZ and KP4EOR on 12-2-78, distance 3,977 miles.

VK8GB contacts JH6TEW for his first JA 2 metre contact via TEP on 24-2-78.

VK8VV also working to JA.

New SMIRKS include VK3OT, YJ8KM and VK5KK.

JAs excellent to southern States during February.

VK5KK hearing VK7RTW on 432.475 to S7 on 26-2-78, distance 700 miles.

#### MAY 1978

Large scale openings on 6 and 2 metres in Darwin. Stations worked/heard in VK4 and VK8 included KG6JH, KG6JDX, KG6DX, HL9WI, KH6HI, KH6EQI, KH6IAA, KH6JSI and VK4IK/KG6.

144 MHz contacts from Darwin to JA4 and JA6 areas only.

On 1-3-78 XE1GE heard ZL TV audio on 50 750; same day JA5CMO worked CE3OK on 6.

On 19-3 KH6JSI worked LU7FA and LU3HFU.

26-3 KH6 to PY2CSS and PY5WBR. VK4ZNC to KG6JDX and KG6JH on 15-3.

VK4ZSH "partially" worked P29ZWW on Ch. 40 FM on 22-1-78.

VK2AMW Dapto EME project terminated after extensive vandalism to site.

#### JUNE 1978

More 6 metres DX. FK8AB active in JA on 28-3, same day VK2BXT and VK2BOV worked KG6DX.

1-4-78 VK5KK to KG6DX and JA to YJ8KM 12-4 VK3OT to KG6DX

Large night time openings on 13-4 and 16-4 from VK5 to JA1, 2, 3, 4, 5 and 6.

HL9WI working into Perth on 9-4, and HL9WI heard WA6JRA beacon on 9-4 also.

VR4DX looking for 6 metre gear, while VK2ZTB reports on TEP type 2.

#### JULY 1978

6 metres continues YJ8ZV worked in Japan on 13-4.

Letter from late K6RNO indicates stations heard or worked during 1958 including VK5RO and VK5BCI (Plus VK2s and VK4s of course)

3-5-78 HL9WI worked VS6HK, indicating some activity in Hong Kong.

JAs still being worked in Darwin on 2 metres in May. VK8GB total of 2 metre JA contacts for equinox now 3591

VK3OT sent 157 QSLs to JARL for \$6.11 for season's workings!

Mt. Dundas Channel 5A proposal causing trouble already

New Australian 10 GHz record between VK4ZSH and VK4ZNC on 14-5-78 with 5 x 7 signals over distance of 106.1 miles.

#### AUGUST 1978

P29 activity on 6 metres. Contacts made to many countries in South Pacific on P29 50 MHz band

WA4TNV/KL7 operates out of KL7FB! club station on 6 metres.

HL9WI running 6 metre skeds with LU3EX

The mysteries of "Sporadic E (Es)" revealed with reference to Skylark rocket launchings from Woomera in late fifties. 1971 launching manifest to measure exact proportions of an Es layer

#### SEPTEMBER 1978

An interesting look into the past on 6 metres . . . did you know K6GDI was the first to obtain WAC on 6 metres?

ARRL WAS listings shows E2W with 35 USA States! SM7ZH had 29, PZ1AE 26.

LU3EX to JA6FR record of 1,200 miles still standing in 1978.

Details of meteor showers for following months.

And the problems of Channel 5A; proposed Ethnic TV using Channel 5A

#### OCTOBER 1978

The band has yet to shut in Darwin on 144 MHz!

A list of ten active UA stations worked on 2 metres from Japan

VK2BD working VK7 in mid-winter Es

Some more past news Details of all the firsts in 1947 cycle This includes the one time world record between VK5KL and WTACG/KH6 on 6 metres

#### NOVEMBER 1978

VK5LP on holiday and a "fill-in" editor employed!

Details of early VXX4, VK5, VK8 to JA openings in September.

Auroral openings on 6 metres and 2 metres between VK3, 5 and 7 on 28-8-78.

VK5ZAU provides some "overseas" DX from Kangaroo Island on 144, 432 and 1296 MHz around 25-8-78 to Adelaide and points north over a 150 mile path well shielded from line of sight.

IC401 hits the market place; modifications to commercial 2 metre rigs.

#### DECEMBER 1978

KH6 to VK2 and VK5, first time in 20 years. KH6EQI to VK2BXT, VK2YDY, VK5KK, all on 16-10-78.

JA and other news from Darwin looks like a list from the JA Call Book.

F08DR active on 6 metres.

Auroral propagation on 29-0-78 with VK5KK to VK7ZAH on 144 MHz, plus 6 metres between VK1, 2, 3, 5 and 7.

VK9ZM leaving Willis Island on 6-12-78.

#### JANUARY 1979

Beacon format changed to list stations in order of frequency, 45 amateur band beacons and 7 TV sound channels listed.

First mention of the Army type PRC10 transceiver for listening 38 to 56 MHz.

VK6GB works CR8AJ for country 13 on 6 metres, continues to work many JAs on 2.

Observations show 144 MHz contacts to Japan start mostly about 1100Z except on very active days when contacts may start 1030Z. Band remains open for 1 to 1½ hours.

Peter Wolfenden VK3ZPA, Chairman VHF/UHF Advisory Committee, reports there is unlikely to be any further proliferation of Channel 5A.

#### FEBRUARY 1979

KH6EQI and KH6HI again on 6. Many JAs, band open for some contacts almost every day during October and November.

ZLs on 6 on 5-12. P29ZNL works KH6EQI (KH6HI).

VK works 3D2CM 15-12, KH6IAA 19-12, P29ZWW and ZL3QK 20-12.

ZLs again 23-12, some using handbags and whips! 31-12 more ZLs.

VK5KK total of 621 contacts with JA stations during 1978.

VK5ZBU and VK5RO hear WA6JRA and TI2NA beacons.

22-11-78 VK5KK hears VK6WG on 1296.1 MHz 5 x 2.

24-12-78 VK3 to VK5 on 144 MHz. 28-12 VK6 on 144, 432, 1296 and 2304 MHz.

New world record set on 1296 at 1,310 miles between Wai VK6KZ/P and Chris VK5MC on 29-12-78. David VK5KK also worked VK6KZ/P about same time, on 1296.

Hal VK4DO worked 1357 JAs on 6 to 13-11-78.

VK4ZJB confirms there is a Channel O translator between Townsville and Cairns.

Carnarvon working through Busseton Ch. 8 repeater 150 miles south of Perth.

16-12 FK8AA worked by VK3OT, VK3AMK and VK3AKK.

27-12 FK8AB and FK8AX to VK2ZBD and others.

Passing of Sam Harris W8UKS/W1FZJ/WIBU on 6-11-78 recorded.

7-1-79 VK2 and VK4 work New Zealand on 2 metres. Same time VK2BQJ works

ZL1TAB on 432 MHz — first VK contact to another country on 432 MHz.

Alice Springs repeater VK8RCA Ch. 8 now on, 19 watts output.

#### MARCH 1979

ZL2MHF beacon operating on 52.510. 4 hours of ZL to VK5 on 14-1, plus many JAs.

VK2YJC worked more than 200 ZLs on FM during the big January 2 metre opening.

Lyle VK2ALU confirms 432 EME project at Dapto will be shifted to safer place.

YJBPV now being heard in Brisbane more often than southern beacons.

Good 2 metre tropo conditions between VK4 and VK2.

Col VK5RO having constant contacts with Frank VK2ZI in Broken Hill on 2 metres.

#### APRIL 1979

Bob Grimm K6RNQ joined silent keys on 13-1-79, well known for his extensive VHF activities, especially 50 MHz during cycle 19.

Wai VK6KZ says he wants to try the path from Augusta in the south-west of WA for his portable jaunts — this is about as far west as one can go!

Hel VK4DO has been on air for 56 years, made life member of Central Queensland Branch of WIA.

JA2BZY worked 27 countries on 6 metres as at 3-2-79.

SMIRK lists 42 countries as allowing 6 metre operation at present.

6 metre liaison net now established on 28.885 MHz, much info being swapped.

#### MAY 1979

Newspaper report that General Manager of Channel O said the change to Channel 10 in about 9 months would cause little inconvenience.



PHOTO 5: Another well-known operator on VHF/UHF — Reg VK5OR in his well-equipped shack.

VK3AMK said many old guidelines of years ago for 6 metre propagation are no longer valid.

Colin VK6CM and Roger VK6NR created a State first bi-directional contacts on 10.280 GHz on 14-2-79, distance 25 km for 10 mW.

Peter VK5ZCT in Port Lincoln used Bunbury repeater Ch 6 to contact Perth. VK2ZQT has a manned repeater on 432 MHz.

First known opening Cycle 21 between W6 and Geelong on 11-3-79.

KG6DX extremely strong to VK2, 3 and 5 on 18-3, and H44DX bursts forth on 6.

TEP type propagation noted on 432 MHz between Rhodesia and Greece on 20-3, distance 6,623 km!

HS1SD active from Thailand on 6 metres, and VQ8KK (?) active on Diego Garcia.

VK8GB heard K08IN, Caroline Is., also K2SNW 50.110 on 11-3.

ZS6LN beams to VK 0600 to 1000Z on 50.050.

HL9WI reports hearing VK8s on 144.110 on 8-3.

4/3 K7KV to VK4RO, 10-3 Okinawa to VK5, 11-3 VK3 to W6 WB6NMT heard in Adelaide.

ZL1AQR used crystal locked DSB and ZL3QK used 80 metre dipole to work W stations during big opening on 10-3.

WA4TNV/KL7 worked VK1, nine VK2, VK4, four VK5 to 5 x 9 on 13-3, and on 17-3 W6XJ works into VK2.

HL9TG works LU3EX and LUBAHW for possible new 6 metre world record.

Chris VK5MC works ZE5JJ on 432 MHz EME 31-3-79.

#### JUNE 1979

28-3-79 HL9TG worked over wide area of VK2, 3, 4, 5, 6, 7 and 8!

3-4-79 XE1GE heard by VK2BYX, VK3OT, VK5KK and several other VKs on 50 009.

VK4RO works KZ5NW, Canal Zone, W4YY, WB4GHA and heard TI2NA.

VK1FT worked W6XJ using 10 watts, signals 5 x 9!

10-4-79 VK5KK worked split frequency to XE1GE, heard by many others.

12-4 W to VK5 13-4 VP1MT to VK2, 3 and 5. 14-4 XE1GE again.

16-4 ZS6LN worked KH6HI, KH6NS, KH6JSI and KH6IAA, the latter about 11,900 miles.

18-4 3D2CM works W4, W5 and W6. ZK1AA active on 50, 51 and 52 MHz. 9N1BMK to operate from Nepal. YBOX special DXpedition to Indonesia 28-4 to 5-5.

20-4 VK5ZBU and VK5AVQ hear VE1SIX beacon.

22-4 VK5LP and VK5KK hear W6XJ being worked by VK7JG.

26-4 an outstanding day for DX—FO8DR heard, others heard, some worked include KG6DX, KH6IAA, many JAs, HL9TG, KA6EOI, KG6JEL, KG6JFK, ZK1AA, DU1DM, VQ9KK, H44DX, JD1YAA, YJ8PV, KH6EQI, also VK2BQJ reported working over 200 JAs!

VK3ATN and VK5MC active on 432 EME working VETBBG, ZE5JJ, ISMSH, etc.

Moves to supply VK0BC with 6 metre equipment.

5B4AZ Cyprus and ZB2BC, Gibraltar, have permits to operate on 6 metres, and ZS6LN, South Africa, worked 5B4AZ with 70 mW output!

## JULY 1979

Beacon list now shows 58 stations.

Large trans-continental backscatter—VK2BQJ to VK6WD with VK5KK in middle.

28-4 W6XJ to VK5KK crossband 28 to 52 MHz.

30-4 YBOX works VK5KK, VK4RO, VK8GB, VK8VV and VK8ZBB.

2-5 VK8s work 9N1BMK Nepal, also hearing W5, W6 and W0 on 50 MHz.

VK9VV worked KA5CEB, and W6XJ works VK8GB, VK8VV and VK8DI on 52 MHz.

9N1BMK worked by H44PT, KA6HF, K9PNT/DU2. CR9AJ on but hard to catch. VU2RM on.

SMIRK warns all operators that no awards will be made which include out-of-band contacts. ARRL very upset about these contacts, too.

Phil VK2BYX has now worked 13 countries on 6 metres.

News from Europe showed first W to Europe opening on 10-2-79 between WB2RLY/VE1 and G3CQJ, crossband 50 to 28 MHz. DK2ZF hearing ZS6PW beacon on 50.030. EI2W in Dublin still licensed to operate 50 MHz.

New trans-equatorial 144 MHz record established between SV1DH in Greece and ZS6LN, South Africa, on 13-2-79 at 7,117 km, distance later extended to 7,127 km by SV1AB!

G3 working ZS6 crossband 28 to 50 MHz.

David VK5KK receives his SMIRK 100 Award.

VK8HW and VK8EW work to Japan on 2 metres FM.

## AUGUST 1979

6 metre DX gone quiet but 2 metre tropo good.

1-6-79 VK5SV worked VK2DAB, VK2BEV, VK2ADZ, all in Griffiths, on 144 SSB; VK2DOR worked VK2DAB, David VK5KK worked him as well as VK7ZAH, VK5CK is content to work 7 stations in Melbourne! Good tropo on 6 metres to over 300 miles.

2-6: 2 metres still open to Griffiths and Melbourne, plus VK7ZAH 5 x 9.

VK7ZTA works repeaters in Canberra, Newcastle and Melbourne.

One-way reception of signals on 432 MHz between SV1AB, Athens, and ZE5JJ, Rhodesia, distance 6,300 km, longest 432 terrestrial reception.

## SEPTEMBER 1979

14-7-79 best Es for winter—open from VK5 to VK2 and VK4, VK2 and VK3 to VK7, and on 15-7 to ZL1AVZ.

24-6 good tropo on 2 metres, VK2ZRU works VK3AUR, while VK2YHS and VK2BQJ work VK5MC.

Beacon on 144, 432 and 1296 being built for installation at Cape Leeuwin on southwest tip of WA.

Ed Roche Trophy made available for North Queensland operators for VHF achievements.

## OCTOBER 1979

Auckland VHF Group placing beacon on 52.100 MHz, while the Wellington Group are operating a 10 GHz beacon!

YJ8PD to increase power to 500+ watts on 6 metres with driver stage supplied by VK5KK and VK5LP.

T2AAA (ex VR8) hoping to get on 6m. ZS5NW leaving Canal Zone, leaving only KZ5JM there on 6 metres.

C21AA DXpedition successful, 10 countries worked on 6. HS1WR active in Thailand.

28-7 opening to H44 from VK4 and VK8. VK9NI most emphatic he will not be operating on 6 metres.

Andy VK6OX and Tony VK6BV have successful 6 metre skeds via meteor scatter

New distance records announced: VK3OT to XE1GE on 6 metres at 13,768 km; VK2BYX to W6XJ on 6 metres at 12,092 km; VK4VC to ZL2BFC on 2 metres at 2,571 km.

VK5KK receives QSL from 3D2CM, VK8GB receives QSL from KX6BU.

ZLs working to W again on 6 metres.

W0YZS completes first WAS on 70 cm for USA award.

70 cm spans the Pacific—WB6NMT to KH6HME on 18-7-79 for new terrestrial record on 70 cm, while VK8GB looking to work JA on 70 cm.

Dick K2RWR working on an array of sixteen 19 element yagis for 70 cm.

Reports on new pre-amplifiers for 70 cm with NF of less than 1 dB. 5B4AZ allocated 50.499 MHz for CW working.

## NOVEMBER 1979

VK2ALU says his main interest centres on 10 GHz, at the moment pending re-installation of 432 MHz EME equipment.

CW signal copied on 44.250 MHz on 23-9 signing "VPS".

23-9 JASCOM worked several LU stations on 50 MHz from 0100Z.

6 metres not dull overseas. JA stations recently have worked VK4, VK6, VK8, P29 KC6, KG6, KH6, H44, YJ8, F08, KX6, HS1, JD1, SW1, A35, 3D2, etc.

N6DX DXpedition successful, but mainly JAs worked, plus KG6 and YJ8.

K9PNT/DU2 can now operate on 52 MHz with FT620 and quad antenna.

Rumours say VU2RM doesn't have a 6 metre allocation.

VK3OT and VK2BYX/ATZ to have DX-pedition to Lord Howe Is. 27-10 to 31-10.

VK5KK fires up temporary manned beacon seeking permit to operate full time.

VK5LP offers info on 13 element beams in effort to promote interest in 2 metres SSB/CW.

Carlos TI2CF hoping to be on 6 metres by Christmas.

Gary W6XJ wins SMIRK Party Contest with 22,720 points, followed by Steve VK3OT, operating as YJ8OT, with 588 points. David VK5KK wins Australian section with 13 points!

## GENERAL

And on that note we can close the November 1979 AR and say that 10 years of very interesting events have been covered. Scattered throughout the many words taken from the past 10 years one can confirm the immense value which has been gained from having a nationwide coverage by CW beacons, on many occasions they have served as a warning of impending openings, sometimes they have let us down due to being on elevated sites and coastal ducting and inversions have been below them, but overall they have been very worthwhile. They have certainly also helped much 6 metre DX in other places of the world where beacons are operating and few countries are without them.

If the research needed for and the writing of this long article, which cannot be successfully shortened, serves to instil enthusiasms in more amateurs to enjoy the fruits of the VHF/UHF bands, then the work has been worth while. If anything more remains to be done in the way of achievements in amateur radio, then it will be done on VHF and UHF, where, despite the inroads made by availability of commercial equipment, much experimenting is still being done, perhaps on a lesser scale than previously, but the dedicated are still to be found there, the result of their work will be the continual lengthening of record distances on all bands available to them.

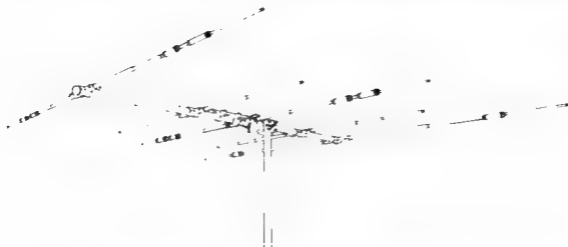
Thought for the decade: "We judge ourselves by what we feel capable of doing, while others judge us by what we have already done."

The Voice in the Hills.

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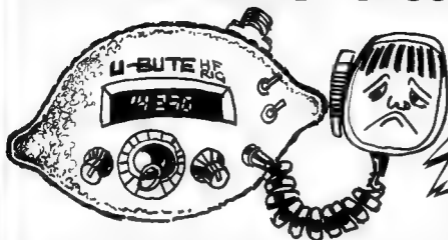
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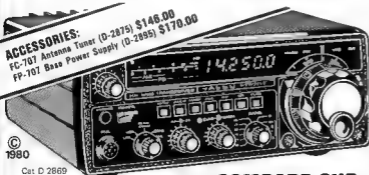
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Amateur Radio Action's  
Introduction (review in June  
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# OSCAR for Beginners

Prepared by the staff of the American Radio  
Relay League  
Newington, Connecticut 06111  
Submitted by Bob Arnold VK3ZBB

## WHAT IS OSCAR?

OSCAR is the name given a series of satellites designed and built by amateur radio operators from several nations of the world. There have been eight OSCARs (Orbiting Satellites Carrying Amateur Radio) in the series. The first OSCAR was put into orbit in 1961, just four years after Sputnik 1 brought the world into the space age. OSCAR 1 was the world's first non-governmental satellite, having been designed and built by a group of volunteer amateur radio operators from California. The two most recent OSCARs, numbers 7 and 8 are still circling the earth, providing two-way communication between amateur radio stations up to 5,000 miles (8,000 km) apart.

## HOW DO THEY GET UP THERE?

When an OSCAR is planned, arrangements are made well in advance with NASA, the National Aeronautics and Space Administration, to schedule a launch alongside another satellite. OSCAR 8, for example, was launched "piggyback" with a Landsat C Earth Resources Satellite. The most recent OSCARs were designed and constructed under the supervision of AMSAT (the Radio Amateur Satellite Corporation), a non-profit scientific organisation in Washington, D.C. Amateur radio operators from Australia, West Germany, Canada, the U.S. and Japan have contributed time and materials, making the satellites a truly international effort.

## WHAT DO THEY DO?

As active communications satellites, OSCARs relay radio signals sent up to them from ground stations, allowing amateur radio operators all over the world to talk to one another. Communication across oceans is common, bringing people from different nationalities and cultures into direct contact. OSCARs 7 and 8 can receive and transmit several different types of communication—voice, Morse code and slow-scan television, among others. The "transponders" aboard the satellites make communication possible. AMSAT-OSCAR 7 contains two transponders which alternate regularly (see "NOTES" on reverse). One of them, "Mode A", converts signals sent to it on the amateur 2-metre band to the 10-metre band; the other, "Mode B", converts 70 cm signals to signals in the 2-metre band. AMSAT-OSCAR

8 also contains two transponders. Its "Mode A" is nearly identical to the one aboard OSCAR 7 (2-10m), but the other, called "Mode J" after its Japanese builders, converts signals from 2 metres to 70 cm. The precise frequencies are listed in the table on the reverse of this sheet.

Live demonstrations of the OSCAR satellites are held in schools to help teach general science, foreign languages, physics, astronomy and electronics. In addition, they can be used for emergency communications when a natural disaster, such as an earthquake, knocks out other ties to the outside world. Successful experiments have shown that the OSCARs can relay medical information such as electrocardiograms from a disaster area to a hospital and help locate a downed aircraft.

## HOW CAN I HEAR OSCAR?

You can hear OSCAR's signals when the satellite rises above your horizon. Since it is travelling at nearly 16,000 m.p.h. (25,000 km/hr.), it soon speeds far over the horizon and out of range. But you will have up to 25 minutes to hear the satellite as it passes overhead. The radio or receiver you'll need to pick up OSCAR's signals is one that covers the amateur 10-metre band. In most cases you must have an amateur radio licence to talk through OSCAR with a 2-metre amateur transmitter (although anyone can listen). The OSCARs are the only satellites that can be used with such relatively simple equipment. For further information on becoming an amateur radio operator, contact your WIA Divisional Officer.

## WHEN CAN I LISTEN FOR OSCAR?

To determine when to listen for the satellite, you have to know something about its orbit. Both satellites are in almost circular polar orbits, which means they pass nearly over the North and South poles. OSCAR 7 at a 910-mile (1,450 km) and OSCAR 8 at a 540-mile (900 km) altitude. They come within range of every place on earth twice a day, at about the same times each day (morning and evening). Since each orbit takes an exact amount of time (called the "period"), a little under two hours, and the earth rotates a certain number of degrees longitude during the orbit (called the "increment"), it is easy to determine when the

satellites will be within range of your particular location. The ARRL OSCAR-LOCATOR is a simple device that lets you visualize how the satellites circle the earth and predict when you will hear them.

## WILL THERE BE MORE OSCARS?

Yes, dedicated volunteers in Japan, West Germany, the U.S. and the United Kingdom are working on various components of future OSCARs. One of these, the AMSAT Phase III anticipated for launch mid-1980, will have an elliptical orbit that will keep it within range of the entire Northern Hemisphere for several hours at a time. This will expand the amateur satellites' practical uses significantly.

The group of radio operators in California who put together OSCAR 1 expanded just over \$63.00 to design and build it. Although the more recent satellites are more complex and expensive, they are still designed and constructed by people from various professions who share a common interest—furthering the amateur satellite programme that has contributed so much to bringing people closer together.

For further information, see *Getting to Know OSCAR from the Ground Up*, a practical manual on radio amateur satellite use published by the American Radio Relay League, 225 Main Street, Newington, Ct. 06111, at \$US5.50 p.p., also available from technical book shops, Dick Smith Electronics stores and Mappages. ■

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- The coding on the label reads. Letter Numerical Two digits One digit Two digits Grade Division Unused Distribution Zone.
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## No. 1 — The ICOM IC280

Have you ever wanted to know more about a piece of equipment except its price and have never got around to gaining the information you desire? Perhaps you are sick of wading through countless magazines to find some small portion of a circuit diagram needed to complete your own personal file on a piece of equipment?

In this and future issues of Amateur Radio we will feature a particular rig showing details of circuitry, specifications and design to enable readers to readily familiarise themselves with amateur equipment on the market today. For the newcomers we will also detail older equipment from transceivers for VHF to receivers for HF. This will enable readers to build a reference library on equipment, a handy addition to the shack.

This month we feature the Icom IC280 2m FM transceiver. The IC280 uses a P-Channel MOS 4-bit microcomputer to control frequency, band edge detection and the display. The 3 channel memory is controlled electrically by the use of a 256-bit RAM area. The circuits for these IC280 functions are equivalent in capability to conventional circuits having a large number of C-MOS MSIs.

## SPECIFICATIONS — ICOM IC280

## GENERAL

Numbers of semi-conductors

Transistors	37
FET	4
IC	26
Diode	49

Frequency coverage

143.90-148.11 MHz
143.900 ~ 146.000 MHz: 5 kHz steps
146.010 ~ 148.110 MHz: 15 kHz steps

Memory channels

3 channels, any inband frequency programmable

Usable conditions

Temperature: -10°C-60°C (14°F-140°F)  
Operational time: continuous

Frequency stability

Within  $\pm 1.5$  kHz

Antenna impedance

50 ohms unbalanced

Power supply requirement

13.8V DC  $\pm 15\%$  (negative ground) 3.0A Max.

Current drain

Transmitting	HIGH (10W)	Approx. 2.5A
	LOW (1W)	Approx. 1.2A
Receiving	At max. audio output	Approx. 0.7A
	Squelched	Approx. 0.5A

Dimensions

156 mm (W) x 58 mm (H) x 228 mm (D)

Weight

Approx. 2.2 kg

## TRANSMITTER

Output power

10W (HIGH), 1W (LOW)

Emission mode

16 F<sub>3</sub>

Modulation system

Variable reactance frequency modulation

Max. frequency deviation

$\pm 5$  kHz

Spurious emission

More than 60 dB below carrier

Microphone

600 ohms dynamic microphone with push-to-talk switch  
(IC-SM2 electret condenser microphone may also be used.)

Operating mode

Simplex, Duplex ( $\pm 600$  kHz from receive frequency)

## RECEIVER

Receiving system

Double conversion superheterodyne

Modulation acceptance

16 F<sub>3</sub>

Intermediate frequency

1st: 10.695 MHz  
2nd: 455 kHz

Sensitivity

More than 30 dB S + N + D/N + D at 1  $\mu$ V  
Less than 0.6  $\mu$ V for 20 dB Noise quieting

Squelch sensitivity

Less than 0.4  $\mu$ V

Spurious response rejection ratio

More than 60 dB

Selectivity

More than  $\pm 7.5$  kHz at -6 dB point  
Less than  $\pm 15$  kHz at -60 dB point

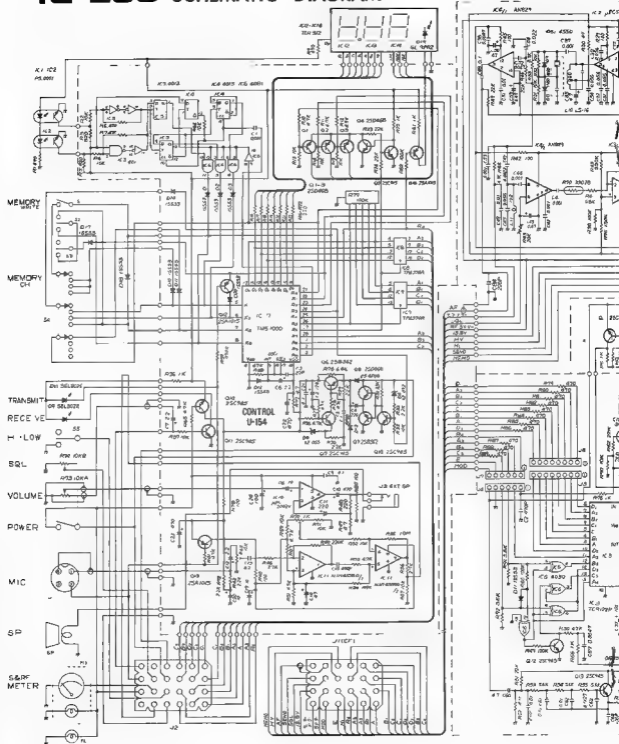
Audio output power

More than 2.0W

Audio output impedance

8 ohms

## IC-280 SCHEMATIC DIAGRAM



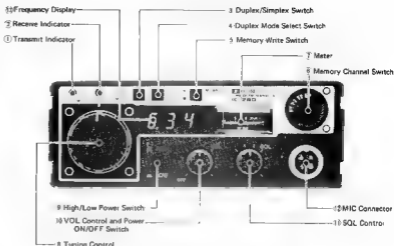


The control portion (front panel) of the IC280 can be separated from the rest of the unit and the two parts can be connected with a cable. The control unit is approximately one third of the whole unit.



PHOTO 1 (above): The IC280 and at right (PHOTO 2), showing front control functions.

## FRONT VIEW



## Microphone plug exploded view

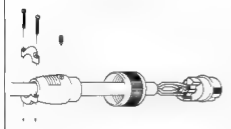


FIGURE 1

For newcomers to VHF: be sure to use a suitable VSWR meter designed for VHF when tuning an antenna for 2 metres. A diode meter not engineered for VHF can produce an error up to 40 per cent. It is advisable when adjusting a mobile antenna to do so with the motor running preferably above idling speed ensuring proper voltage level to the transceiver.

## Microphone connection

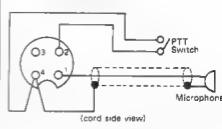


FIGURE 2

(Thanks to Vicom International for the supply of photographs)

## (TOP)

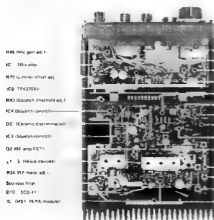


PHOTO 3: Top view of circuit layout.

## (BOTTOM)

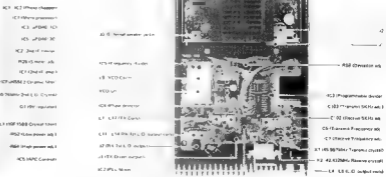
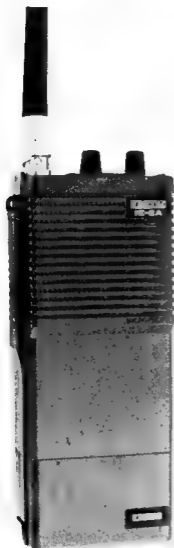


PHOTO 4: Bottom view of circuit layout.

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\*See review "Amateur Radio Action" Vol 2/13

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# AMATEUR SATELLITES

R. C. Arnold VK3ZBB

## AMSAT PHASE III — COUNTDOWN No. 8

Unfortunately this could not be included in AR prior to launch date but the information may be of interest:—

By the time that you receive this last Phase III Countdown, the Phase III Satellite and FIREWHEEL will be at Kourou, in French Guiana, ready for the launch with the ESA LO2 Mission, nominally on 23 May 1980.

The LO-2 launch has a far wider latitude than most previous launches of OSCAR satellites, which previously accompanied meteorological and weather satellites demanding a precision window, and A-O-9 may be launched between 1100 and 1430 UTC on any day from 20 May until 8 June 1980.

Due to the memory problem vulnerability under hard cosmic radiation bombardment a new dynamic memory has been built by DJ4ZC but with only half the memory of the original. Some limitation in the versatility of both the CW and RTTY store in the general beacon may be expected.

The antenna system also has been redesigned and modified in order to ensure encompassment and good housing in the payload enclosure.

The mass of the Phase III satellite is 85 kg, this being inclusive of the kick-motor-unit, the propulsion mass of which alone is 30.16 kg. It has a specific impulse of 264 seconds,  $AV = 1168 \text{ m/second}$ .

The factors for the initial (transfer) orbit are as follows:—

Height Apogee: 35,800 km. Height Perigee: 200 km. Inclination: 17.50°. Eccentricity: 0.7302. Initial argument of Perigee 189.7°. Shift: 0.7427°/day. Period: ca. 10.5 hours.

For the final orbit, following kick-motor firing —

Height Apogee: 35,800 km. Height Perigee: 1500 km. Inclination: 07°55". Eccentricity: 0.6852. Shift: 0.5714°N per day, e.g. 26.0897° per year.

Potential users are advised that whilst the orientation of circular polarization of the spacecraft's 435 MHz receiving uplink

## UOSAT LAUNCH CONFIRMED

NASA has formally agreed to launch Britain's first spacecraft, UOSAT. It will be a secondary payload on the launch of the Solar Mesosphere Explorer mission from the Western Test Range in California. Launch is present scheduled for 30 September 1981 and the Thor-Delta rocket will place UOSAT in a circular polar orbit at a height of 530 km.

The purpose of the spacecraft is primarily educational and it is being constructed at the University of Surrey. See AR August 1979 for details of the anticipated onboard equipment.

## "ORBIT" MAGAZINE

AMSAT members should have now received their copies of the first edition of the new magazine "ORBIT", which replaces the AMSAT newsletter. The volunteer editorial staff must be congratulated on an excellent production.

"ORBIT" is sent free to all members of AMSAT (extra for airmail) and all satellite enthusiasts should subscribe in order to be up to date with AMSAT happenings. The March edition contains articles on:—

- Radio Transmissions from Outer Space by ZS1BI, which discusses the availability of signals from some seventy satellites transmitting on the 136/7 MHz and the 149 MHz bands. These range from Alpha 1, launched in 1962 — yes 1962 — to Cosmos 1092, launched in 1979.
- 70 cm Satellite Antenna Techniques by WDFAB — some interesting ideas for satellite antennae.
- Lots of interesting information on the Phase III satellite by G3ZCZ and WA2LQO.

The AMSAT address is PO Box 27, Washington, DC 2044, USA, and as from 1st July the subscription will be \$US20 per annum.

## SPACECRAFT DATA Orbital Data (March 1980):

A07 progresses an average of 28.836363° W per orbit in a period of 114.843333 minutes. A08 progresses an average of 25.801665° W per orbit in a period of 103.206666 minutes. A07 operates on Mode A and Mode B on alternate days (but see jottings).

## Operating Modes:

A08 modes of operation are Mode A, Monday and Thursday; Modes A and J,

having worked VK3, ACR, BWC, ZBB, YQX. He is looking for a VK7 to achieve a new and greater distance.

Cedric VK6CD has probably the clearest and strongest signal on A07, B — he runs only 9 watts — who says high power is necessary?

We are still looking for a VK3 enthusiast to provide satellite notes for the weekly Divisional broadcast and liaise with me in my capacity of Federal Co-Ordinator.

During May A07 has been acting peculiarly as it did this time last year. The beacon transmits garbage and acquisition is rarely made earlier than seven minutes after the calculated time. The problems are probably due to the satellite flying in partial darkness — see my earlier reference to an article in "Radio Communication".

ZL1AOX is operating a control station for Phase I.I.

Pat G3IOR is looking for records of operating experience by VK amateurs. I shall be grateful if operators, particularly "old timers", will take a little time to outline their experiences during the past 20 years, and let me have them as soon as possible. Participation will ensure a permanent record will be maintained, and one day I hope our experiences will be printed in "Amateur Radio".

## POSTSCRIPT

As we go to press we have some sad news of OSCAR Phase II. The satellite was launched on Friday, 23rd May, at 1428Z but unfortunately the main rocket failed after approximately three minutes resulting in an uncontrolled spin which caused the rocket and both the professional and the amateur satellites on board to land in the Atlantic Ocean. At this stage it is not known whether the back-up satellite is available for early launch but it is presumed that development of the Phase III satellites will proceed. It is hoped that much of the data which has been previously disseminated through Amateur Radio will be applicable some time in the future.

This incident is a great disappointment to participating amateurs in Australia and is a sad blow for AMSAT and the satellite group in Germany, who devoted so much time and money to the project. The failure was completely beyond the control of the amateur fraternity.

## Spacecraft Frequencies

	Craft	Uplink	Downlink	Beacon
A07	Mode A	145.850-145.950	29.400-29.500	29.502
	Mode B*	432.125-432.175	145.975-145.925	145.972
A08	Mode A	145.850-145.950	29.400-29.500	29.402
	Mode J*	145.900-146.000	435.100-435.200	435.095

antenna remains right-hand circular that of the 145 MHz transmitting downlink antenna shows LEFT-hand circular.

The balance of this report was circulated to Divisional Satellite Co-Ordinators for dissemination via the Divisional broadcasts.

Tuesday and Friday; Mode J, Saturday and Sunday. Wednesday is an experimental day and may be on Mode A, Mode J or Mode D, the recharge state.

## JOTTINGS

9M2CR in Port Dickson, Malaysia, has achieved his furthest A07, B, contacts,

## NOTE MAGPUBS REMINDER

Not handling subscriptions to Overseas magazines, except Break-In and VHF Communications.

As already advertised.

**MAGPUBS**  
P.O. Box 150, Toorak, Vic. 3142

# SPOTLIGHT ON SWLing

Robin Harwood VK7RH  
5 Helen St., Launceston, Tasmania 7250

**What is Short-wave listening? Is it different from operating a ham station or a CB? Is it expensive? Do I need a licence?**

These are the most often asked questions by those uninitiated in the art of short-wave listening, even from those with technical or operating experience over a number of years. This column aims to present each month information not only for the beginner, but for those advanced in electronics to AOCOP and beyond. Short-wave listening or monitoring is an integral part of radio telecommunications.

In the radio spectrum, frequencies of between 3,000 and 30,000 kilohertz are known as the High Frequency Bands. These frequencies carry signals over many thousands of kilometres, whilst medium frequency signals are for local to medium areas of up to 200 kilometres. The distances covered on HF are dependent on several factors—the time of day, the season, the frequency chosen, and the power of the transmitter. However, we will not get into propagation at this stage. Those interested in SWLing, concentrate on listening to signals outside the local area, to long distance or DX signals as they are known.

What do the SWLs listen for? Many things—for example, it may be a broadcast of a concert live from the Albert Hall in London; Mass from the Sistine Chapel in the Vatican; perhaps a debate in the United Nations Security Council in New York, or a Japanese fisherman thousands of kilometres away from his home communicating with other trawlers scattered throughout the oceans of the world. They also could be listening to communications between the pilot of a Jumbo Jet and an airport in Europe, maybe an orbital satellite carrying signals from deep space.

As can be seen there are many facets of short-wave listening. Some concentrate exclusively on specific areas such as foreign broadcasts, propagation, utilities, amateur radio and current affairs, etc.

Short-wave broadcasts have been going on for about 50 years or more. When radio first commenced broadcasting in the early twenties, it was confined to the low and medium frequency ranges. However, as the number of stations increased, so did the pressures for more frequencies, and many of the non-broadcasting sectors of communications moved to the shorter wavelengths. The public broadcasters were given the medium frequencies to use.

It was not too long before the broadcasters found that the higher frequencies did provide a wider coverage of distances.

Broadcasts initially were usually confined to news and information in the local languages for tourists and expatriates abroad. However, as the international situation worsened, they then commenced programming in other languages, and presenting their points of view for the people of other nationalities.

It was Dr. Joseph Goebbels who developed radio broadcasting into a new and powerful weapon of war. It was the birth of propaganda in radio. The outbreak of hostilities led to the increase of short-wave broadcasting. A radio war broke out between the combatants, with claims and counter claims bouncing off the ionosphere, and it was hard to discern the truth for those, particularly in neutral countries.

With industry geared up for the war effort, radio and electronic technology made significant advances, especially in the field of higher powered transmitters and directional antenna systems to service a wider and diverse area and audience.

With the cessation of hostilities in 1945, short-wave broadcasting had not abated, as the international situation had altered the maps of Europe and Asia. New powers had emerged with their ideologies, as radio was extensively utilized in the period known as the Cold War. Nations commenced to jam programmes emanating from other lands as tensions increased. In many countries, broadcasting became a State Monopoly, an arm of government, conforming to its needs and directions. Hence there arose a need for independent sources of information and entertainment.

*A Call to all  
holders of a*

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As many colonial powers divested themselves of their possessions and territories in the fifties and sixties, a new voice—the voice of the Third World was heard.

Today, broadcasting via short-wave is still very active. Whereas 40 years ago there were perhaps a dozen or so organizations, there are hundreds of stations active today with a multiplicity of programmes.

In next month's column we will discuss what is required for those wishing to take this activity, or to further their knowledge.

## AMATEUR OPERATOR'S HANDBOOK — 1978

**MAGPUBS**

P.O. Box 150, Toorak, Vic. 3142

**NO AMATEUR STATION SHOULD  
BE WITHOUT ONE.**

## QRP

### QEMFIELDS RADIO GROUP

The Centenary Certificate draw for the QRP Sapphire organised by the QEMF Radio Group was won by John Martin VK4NCP.

### SAFETY FIRST

To drive a nail without smashing your finger, hold the hammer with both hands or have your XL hold the nail.

If people talked about only what they understood, the silence would be bearable.

Loss an hour in the morning and you will be looking for it the rest of the day.

—ARNS Bulletin, January 1980

### PROPHECY?

A voice said unto me: "Smile and be happy things could be worse."

So I smiled and was happy, and behold, things did get worse.

### CAN YOU HELP?

At a recent "Workshops" conference held by the VK4 Division, a motion was passed that the WIA promote a series of articles on the subject of digital techniques, particularly in relation to transceivers.

The publications committee would be most pleased to publish such a series, and we now appeal to our literary members to contact the editor if you can be of assistance in this regard.

According to NAXX's column in CQ March 1980, the FCC (in the USA) received 15,825 RFI complaints in the quarter July to September 1979, lower than the 17,942 in the previous quarter '12,065 cited a TV receiver as the victim and of these 9,891 emanated from CBers and 525 from amateurs. A disturbing statistic was 377 complaints by amateurs citing other amateurs compared with 225 in the previous quarter. Many of these complaints relate to co-channel interference, something which is so-called "self-polluting" service should be able to resolve with Commission intervention.

### SAFETY STANDARDS

A Commissioner of the (USA) Consumer Product Safety Commission recently stated that a mandatory safety standard is needed for CB antennas. His concern results from the fact that about 200 people in the US are electrocuted every year while installing (or removing) CB antennas—accidentally touching HV power lines—NAXX column in CQ March 1980.

# VHF-UHF

## An expanding world

Eric Jamieson, VK5LP



Forreston, S.A. 5233

### VHF/UHF BEACONS

Freq.	Call Sign	Location
50.005	HA4MIR	Honlaria
50.023	HM2PR	Hallit
50.025	4Y5RC	Jamaica
50.035	ZB2VHF	Gibraltar
50.036	HC1JX	Guilo
50.038	PY7THF	French Guiana
50.045	WAGMH	San Diego
50.048	YB4RC	Alberta
50.050	Z3SE	South West Africa
50.055	Z1UHF	Auckland
50.060	PY2XB	Sao Paulo
50.070	YV5ZZ	Caracas
50.070	YF8WB	Bermuda
50.080	W1AW	Connecticut
50.089	T2JNA	Costa Rica
50.089	W4EJA	Los Angeles
50.098	Y1S1X	New Brunswick
50.098	WD4CEI	North Carolina
50.100	KH8EQ	Pearl Harbour
50.104	K4EJO	Tennessee
50.108	KC4AAD	McMurdo, Antarctica
50.110	KH0AB	Salpen
50.110	ALTC	Anchorage
50.120	4B7EA	Sri Lanka
50.144	KC8IN	Ponape, Caroline Is.
50.498	5B4CY	Cyprus
51.998	YJ8PV	New Hebrides
52.300	VK6VF	Darwin
52.350	ZL2VHM	Palmerston North
52.350	VK8RTV	Perth
52.400	VK8RTU	Kaiparaire
52.400	VK7RNT	Launceston
52.440	VK4RTL	Townsville
52.450	VK2WI	Sydney
52.500	JA2IQY	Mie
52.500	ZL2VHM	Palmerston North
52.510	ZL2HMF	Mt. Clunie
52.500	VK8RTV	Albany
52.500	VK8RTT	Caranston
53.000	VK5VF	Mt. Lofy
144.010	VK2WI	Sydney
144.162	VK3RG	Glippsland
144.400	VK4RTT	Mt. Mowbray
144.478	VK1RTA	Camberra
144.500	VK8RTV	Albany
144.500	VK8RTT	Caranston
144.700	VK3RTG	Vernmont
144.800	VK5VF	Mt. Lofy
144.900	VK3RTX	Ulverstone
145.000	VK8RTV	Perth
147.400	VK8RCW	Sydney
432.400	VK4RBB	Brisbane

No changes to the beacon list this month. The Geelong beacon VK3RGG on 52.330 MHz still awaits P and T approval — it seems months since I first reported the beacon awaited such approval!

### RDX MATTER

The 1980 autumn equinox didn't live up to various predictions of being the possible peak for cycle 21 in the southern hemisphere. There have been the usual scattered contacts to various places overseas but nothing substantial.

Tony VK6BV rather sums up the situation by saying "April did not bring much in the way of DX for me. Instead of going through the month day by day, will start with the three days on which DX was worked: 5-4: JA1 and JA2 0500 to 0520Z. 12-4: JA1, JA2 0615Z on 13-4: JA7, JA8,

JA0 0540 to 0625Z. Days on which JA activity was observed on 50 MHz were April 1, 2, 3, 5, 7, 12, 13, 14, 20, 27, 28, 29. The TV video on 49.750 was heard every day of the month except 8, 9, 10, 15 and 26.

"ZL TV video on 45.250 was observed on 4, 14, 19, 20, 21, 22, 23, 24, 25, 27, 28, 29 and 30. Audio on 50.750 on 14-4 for 5 minutes on 14-4 at 0220Z. VK video on 46.250 heard on 14, 20 and 29, no audio at all. No European TV signals heard, or any other of note. ZL TV comes in between 0000 and 0200Z and departs between 0500 and 0700Z. VK TV never very strong, mostly about 0200Z. Northern TV on 49.750 at times so strong harmonics and rubbish can be heard right up to 52.500."

It would seem that about sums up the situation. Did hear on the grapevine that VK8GB had been having a few reasonable contacts, and still getting a few contacts on 144 MHz to JA.

John VK4ZJB has written to say liaison on 28.885 indicates XE1GE has not so far worked into VK4, so it looks as though Geoff will have to work hard now to make it there or anywhere else in VK for that matter, and his contact to Garry VK5AS is probably as far west he was able to work.

A feature of the autumn just past seems to be the lack of any substantiated reports of working between VK5 and W. There are reports from time to time of beacons, etc., being heard but nothing else. It seems the same peculiar conditions have existed this cycle as cycle 19 in 1958, when W and ZL contacted on many more occasions than W to VK. But what peculiar conditions exist which allow contacts to VK2, VK3 and VK5 from XE1GE over a period of 5 days in April, without so much as a whisper from W land. Strange indeed.

There is little doubt our inability to work on 50 MHz cost us many contacts. Look at the times Tony VK6BV, mentioned above, heard JAs on 50 MHz but not 52 MHz. The same has applied in the southern States, and what has been worked has been by sheer hard work when split frequencies are involved, especially when some odd part of a megahertz are used as with XE1GE!

From the "Geeking Newsletter" it is noted XE1GE was first heard by Peter VK3AWY on 10-4 at about 2300Z, then worked on 11-4 at 2310Z, with the best performance from the Mexican station on 14-4 when he worked VK3ASQ, VK3AQR, VK3ZZX, VK3BGI and VK3AKK. So coupled with the working of sundry VK2 and VK5 stations Geoff XE1GE should have something to remember.

### FROM SMIRK

Latest SMIRK Newsletter is again saturated with information on six metre happenings in the northern hemisphere in particular. Some excerpts which might interest you include a report on the operating of Harry EI2W in Ireland, who commenced operations on 50 MHz at 1473Z on 20-10-79,

first QSO to VE1AVX, who was heard every day for two months! In about 6 months Harry had 1552 QSOs with over 600 different stations in USA, working all call areas, plus VE1, 2, 3, 4, KP4, VI and XE Activity noted was much greater than during IGY. Highest MUF recorded was 62.750 MHz on 15-12-79. On 11-12 worked KOSFH, and KOKS, who was using 3 watts. At last contact Harry had worked 43 US States, probably more now! FY7AS is to QRT in June with no one to take over the station. Pity. In addition to Harry, two other Irish stations licensed to operate 50 MHz are EMAS and EI9D. No G stations permitted to operate 6 metres, but crossband working between 6 and 10 metres has netted the G stations all W call areas, VE, Sable Is., VP9, KP4, YV4, ZB2, HC1JX.

Bill WX3O of "World Above 50 MHz" is trying to establish who holds the world distance record on 6 metres. Some job. Until something else comes along it still is held by LU8EX and JA6FR, standing since 24-3-58! Just to make the job interesting for Bill he has to contend with such things as ZB2BL working four JAs over the pole 0000 to 0030Z on 8-4-80.

### WORLD-WIDE LOCATOR

A meeting of European VHF Managers was held in London on 28th and 27th April, 1980, to discuss the question of the introduction of a world-wide locator system which would allow the accurate locating of stations anywhere when distances have to be considered for record and other purposes. A form of locator has been in use in Europe for 20 years, and modified types have been suggested for and discussed at the London meeting, but the one most favoured is called the G4ANB system. Details of this system have been sent to me for the Australian area, and I propose making it available very soon for publication and look forward to your comments, so they may be relayed back to SM5AGM in Sweden, who has been making the overtures up till now. The system looks good, and could well be of great value in Region 3. More about it soon.

### REGION 1 DX RECORDS

The following information will give you some idea how the operators in Region 1 (basically Europe) have fared in the distance records for VHF and UHF. It is interesting to note their lowest band being 70 MHz that Es does not feature as a mode of operation for contacts, though it does on 144 MHz. The 70 MHz distances are very short when compared with our 52 MHz but then the British Isles are not very big and it appears no other European country uses 70 MHz.

**70 MHz:** Tropo GM3WOJ to GU3HFN 602 km. Aurora G3OSS to GM3JFG 28-8-78 709 km. Meteor G3SPJ to GM3JFG 13/-12-78 728 km.

**144 MHz:** Tropo IT8KSO to 4Z4AQ 28-6-77 2158 km. Aurora G3CHN to UP2BBC 26-3-76 1915 km. Meteor GW4CQT to UW6MA 12-8-77 3099 km. Es CT1TW to OD5MR 28-6-78 3884 km. F2 (TE) 14EAT

to ZS3B 30-3-79 7788 km. EME SM7BAE to ZL1AZR 4-3-69 17525 km

**432 MHz:** Tropo DK2NH to EA1CR 29-11-79 1608 km. Aurora SM5CUI to UA3ACY 9-11-75 1260 km. Meteor SK6AB to SM2AID 12-8-77 1033 km. EME I5MSH to ZL2BGC 6-10-79 18437 km.

**1.3 GHz:** Tropo GD2HDZ to HD9AMH 26-10-75 1131 km. EME PA0SSB to VK3AKC 22-7-75 16640 km.

**2.3 GHz:** Tropo G3LQR to OZ9OR 30-6-76 764 km.

**3.4 GHz:** Tropo DC0DA to G3LQR 29-11-79 430 km.

**5.7 GHz:** G3BNL to G3EZZ 23-4-73 152 km Tropo.

**10 GHz:** Tropo I2FZD to I4CHY 27-7-79 633 km.

**24 GHz:** Tropo HB7AKR to HB9MON 5-10-79 177 km.

It is interesting to note from the above table that no less than seven records were established in 1979 and most have been set in the past five years. It surprises me the 432 MHz tropo record is not further. It also makes me wonder whether during the past 12 months or so when so much has been done working crossband from Europe to USA 10 to 6 metres, what lost opportunities there may have been on 144 MHz for a crossing of the Atlantic because there have been some very good Es conditions in the northern hemisphere as well as conditions produced by the high solar activity. It seems to me to be an area which should be looked at from both sides of the Atlantic during the trough of solar activity when Es should be at its best. I would not have been surprised to read of someone bridging the ocean there on 144 MHz, probably no one has been even trying when it has been so easy on 6 metres!

#### SIX METRES OVERSEAS

A rather interesting contact took place on 16-3-80 when Peter H44PT worked FY7AS along a path which closely followed the equator all the way for a distance of almost halfway around the world (Solomon Islands to French Guiana). The same day between 0030 and 0420Z Al KH6IAA worked into South America with contacts to PY, LU, CX, HC, TI and HK! KG6DX and KG6JCS worked PY1RO around 0450Z. KH6NS has now worked all 50 US States on 6 metres, an effort of considerable achievement and is believed to be the first station outside USA to do so.

The South African stations are still active; on 9-3 ZS6LN worked K5KW cross-band, and the two beacons of ZS6LN and ZS6PW are being w/de y heard (but not in VK!). The ZS6LN beacon has apparently been heard in Japan, while on 13-3 ZS6LN worked 5B4AZ on 50 112 at 1900Z.

#### 10 GHz RECORD

Advice has been received from the VHF Advisory Committee confirming a 10 GHz contact between Rob VK3YFU and Geoff VK3AUX on 15-3-80 over a distance of 59.71 km or 37.10 miles, establishing a

VK3 record. Congratulations to the two participants, and hopefully this will only be the start of moves for ever increasing distances.

#### NEW ZEALAND

Having just returned from a month's visit to New Zealand I am full of praise for such a lovely country. Whilst the visit was not designed to be an amateur radio visit, I nevertheless took the opportunity to meet a few people. First pleasure was to renew acquaintances with Mac ZL3PK and XYL Nell, whom I had met when they visited South Australia in the sixties, and later his daughter Ailsa and son-in-law Newton Dodge, who stayed with us on their honeymoon. It was a great re-union.

This was followed by a pleasant evening spent at the QTH of Graham ZL3AAD of EME fame, and it gave me a deal of pleasure to be permitted to key his transmitter and hear my own call sign come back as echoes from the moon.

I tried to meet Bill ZL2CD in Wellington, but due to distances involved and lack of vehicles, had to be content with a couple of long phone conversations with Bill.

Moving on to Auckland I just missed the VHF Group meeting by one night, but at the home of Vaughan ZL1TGC, my counterpart in New Zealand who writes the VHF Notes for "Break-In", had the pleasure of meeting some of the ZL1 gang, including Ray ZL1TAB, Quentin ZL1BPW, Ian ZL2AOV/1 and Tim ZL1AQF. Made use of the Auckland repeater to speak to a few other operators, and managed to get QRM'd off the band by one of those people whom we have all heard about who has nothing to do than to run a powerful carrier on selected people! However, the conversation was completed via a simplex channel. It takes all kinds to make a world I guess.

Perhaps the best bit of news I can bring back from there is that the Christchurch Branch are raising the question of 600 kHz offset for their repeaters instead of the current 700 kHz at their National Conference soon. There seems to be more interest in being compatible with VK at the moment, probably helped to a degree by the big opening across the Tasman last year, which indicated the problems of non-compatibility.

Since returning on the 19th May I found I didn't miss all the good 6 metre DX, there hadn't been any in VK5 other than an occasional JA, and this despite the very high solar flux which rose from 205 to 270 in six days to 23-5, with A5 and K3, but producing no DX.

Finally, I am sorry to pass on the news that Allan Parker VK4JS of Longreach joined the ranks of Silent Keys on 27th February, 1980. I knew Allan back in the early sixties when we often had long QSOs on 6 metres when we were able to share a common interest at that time in orchards. I am indebted to Allan VK4ABP for the information, and have sent a card of condolence to Allan Parker's wife, Francis.

Since there is not much else to report, having been away from the VHF scene as well, now seems to be the time to close. I thank John VK5ZBU for finishing the June notes for me. Thought for the month: "Money doesn't talk these days — It just goes without saying."

73. The Voice in the Hills. ■

## FORWARD BIAS

### VK1 DIVISION

(Postal Address: WIA (ACT Division) Inc., PO Box 46, Canberra, 2800 ACT)

The VK1 Division holds a General Meeting for all members on the fourth Monday of each month at 8 pm at the Griffin Centre (Room 1, Ground Floor), Bunda Street, Canberra City. Hams visiting Canberra who would like to meet Territorians (or renew old friendships) are most welcome to come along.

QSL Bureau operations, book sales, and equipment (and junk) sales are regular features at each meeting and, with general business out of the way, we always co-opt the (w)ing? services of an "expert panel of speakers" who seize on a topic and initiate discussion.

Meeting topics planned for 1980 and beyond are: 28th July: Test Gear GDO, CRO, Noise Bridge, etc. 28th Aug: CW From Pump-handle to Electron C Keyer.

22nd Sept: Microprocessor Applications in AR. 27th October: (To be advised.) Possibly a (fame) Politician.

26th Nov: Synthet C Music Wine and Cheese Night. December: No meeting.

18th January: (To be advised).

23rd February: General Meeting (Electronics).

HAMAD — For Sale: US Imports 22-44 24-channel 10M Noise Tx/Rx, 28 480-26 595 MHz, plus helical whip antenna, \$80. Les Thurbon VK1NSK, QTHR. Ph. (062) 96 9225.

## "WILLIS" AIR-WOUND INDUCTANCES

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1.16	1/2	16	3	No	3003	\$1.20
2.08	1/2	8	3	No	3006	\$1.45
2.16	1/2	16	3	No	3007	\$1.45
3.08	3/4	8	3	No	3010	\$1.70
3.16	3/4	16	3	No	3011	\$1.70
4.08	1	8	3	No	3014	\$1.90
4.16	1	16	3	No	3015	\$1.90
5.08	1 1/4	8	4	No	3018	\$2.10
5.16	1 1/4	16	4	No	3019	\$2.10
6.10	2	10	4	No	3907	\$3.18

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ROY LOPEZ (VK2-BRL) Manager

# The 1980 Federal Convention and Annual Report

The 1980 Federal Convention has come and gone. No world shattering news but steady progress towards the improvement of amateur radio in Australia for the benefit of all operators.

What the WIA does for amateur radio is for all amateurs not for WIA members alone.

The Federal Convention, held in the Brighton Savoy Motel in Melbourne from 25th to 27th April, came out strongly in favour of the IARU and re-affirmed support both for the IARU and the IARU Region 3 Association. Thought is being devoted to the future of this important international organisation or Equally important is the thought going into amateur radio in Australia arising from the decisions of WARC 79.

The Convention hours are long and arduous, the work is intricate and complex and few enough hours are available for rest. Is it any wonder that Federal Councillors return home dry and ready for a holiday?

All Federal Councillors and Alternates attended. The 17th ran from May AR except for VK7, which was represented by Brian Morgan VK7RR and Reg Emmett VK7KK, Fred Parker VK2NFF in place of Phil Carr VK2ZBX and Grahm Alington VK3YF, attended in place of the outgoing Councillor. The Federal President, David Wardlaw VK3ADW chaired this meeting — his eighth since the 1974 Convention. Executive members attending full time were Peter Wollenden VK3ZPA, Executive Vice-President and elected Federal President during the Convention, Ken Seddon VK3ACS and Courtney Scott VK3BGO were both re-elected. Harold Hapner VK3AFD was absent overseas but also was re-elected as well as Bruce Bathols VK3JY, Editor of AR.

Visitors who attended the Convention relating to their own portfolio also included Keith Malcolm VK3ZYK, Chairman of the VHFAC (see last month's WIANEWS).

## AMATEUR RADIO

Your own magazine, AR, came in for a good share of the discussions mainly because of rising costs. Not one of the passes that publication must not have an AR publication by Officer be appointed to each Division to obtain advertising and articles for publication and that Division be strongly encouraged to incorporate Divisional Bulletins into the printed pages of AR. A suggestion was made that only 11 issues be published each year with the Call Book making the 12th issue. This was overruled by a motion calling on the Executive to examine the feasibility of posting the Call Book to each member each year. As this could not occur until 1981, the motion added that any increase in fees to cover the must be considered and finalised by 15th August next before the 1981 Budget comes up for review.

Adding Divisional news into AR increases costs which would be reimbursed by Divisions partly or wholly by offsetting present insertion costs and having regard to the amount of space used. It was generally felt that Divisional news items would be of interest to readers in other States.

AR will be produced with offset from this issue to hold costs. This is obviously the first of many proposed changes in the pipeline which will be noticed when the new system gets into its stride.

## EDUCATION AIDS

Last year it was thought that the production of original material for educational purposes from the money raised from the Dick Smith donation was finalised. However upon reflection during the year, the question was asked if the end result would be acceptable. As the result of a much closer examination of precisely what would be involved the Convention came to the conclusion that costs would be well in excess of the amount available if a worthwhile quality production were to be achieved. It was finally decided that the money should be split equally amongst the Divisions to be spent on educational promotional material and that each Division report not later than 31st October on how they have applied their shares or how they intend to use them.

On the question of examinations it was decided to ask the Department to grant permanent morose exemptions to Novices who obtain a pass at 10 words per minute in an exam. Concern was expressed over delays in issuing exam results as well as the issue of licences in some States. The recognition of examinations conducted by other competent bodies, e.g. Technical Colleges, was also to be pursued as in the past.

## TV CHANNELS 8 AND 5A

This remains a major concern. A motion was passed expressing a clear policy. The concept of Independent Multi-Channel Broadcasting is not a matter which concerns the Institute, but the continuing use of Channels 8 and 5A is a matter of concern and must continue to be opposed by all means at our disposal. This extends to encouraging all amateurs to petition their local Federal Parliamentary members to express concern at the continuing use of TV Channels 8 and 5A. The message is plain. The Institute opposes the use of Channels 8 and 5A for television broadcasting by anybody.

## AMATEUR ADVISORY COMMITTEES

The status quo is maintained. The Institute continues to support Amateur Advisory Committees. Work requires to be done on the terms of reference. The establishment of local P, and T/WIA Joint Committees at State level is to be encouraged.

## DMIT CHANGE

The Convention re-affirmed the existing policy that established VHF and UHF band plans be adhered to by all. The "gentlemen's agreement" relating to the HF bands (i.e. CW only in one specified segment) and all permitted modes elsewhere in each band are seen as essential and all amateurs are to be asked to respect these segments so as to avoid chaos.

This also came up in discussions on extending the 80 metre Novice segment down to 3500 kHz. This was rejected. An amending motion to seek an extension down to 3515 kHz instead also resulted in no decision at the Convention — three Divisions for, three against and one abstaining. The extension could result in a year or so vote within 30 days. As it later turned out that vote is in the negative and no downward extension is to be sought.

A 78 cm band plan was adopted as a guideline in the FM section of that band. RITTY spot frequencies are to be re-checked.

Publicity on all these band plans will be following in future issues of AR.

The IARU is to be approached in relation to gentlemen's agreements for all the new proposed HF amateur bands incorporating all applicable modes in a manner similar to those of existing HF amateur bands. All the agreements should be negotiated regarding power limitations in the new proposed 10 MHz band.

## REVENUE

The Institute is to approach the P and T Department for the early use of the new proposed HF bands at 10, 18 and 24 MHz as well as seeking alternative channels in the 500 to 900 MHz region, approximately, for ATV if the present 50 cm temporary allocation is withdrawn.

An alternative membership badge based on the international diamond style of badge is to be designed. This badge does not in any way supplant the existing WIA badge.

A motion was carried that adequate justification for a common band being made available to all amateur licensees had not been established at the Convention.

It was agreed that there should be primary and secondary WIXEN frequencies on bands above 14 MHz. The exact frequencies are to be determined later. The requirement that amateurs must state on licence application forms the equipment to be used was seen as undesirable and a motion to this effect was passed. Also the Department is to be asked to grant permanent exemptions in the CW exam to those Novices who pass the 10 w.p.m.

tests. In reviewing the examinations field, concern was expressed over delays in issuing results and delays in issuing licences in some States, as well as "over the counter" licensing does not yet operate. It was also agreed not to ask for copies of the exam papers and to continue work on other responsible organisations (such as Technical Colleges) conducting and of the year amateur exams on behalf of the Department. The principles affecting Divisional broadcasts were discussed, where as the implications which could arise if the CW portion of the 80m band were to be extended to 3540 kHz in place of the present 3535 kHz. An investigation is to be carried out to prepare a case to be put to the Department for an allocation in the 80 or 40m Amateur phone band segment.

## ORGANISATIONAL

The possibility of appointing a voluntary Press Agent was discussed with the view to taking advantage of potential space in local newspapers (etc.) to promote amateur radio. Further enquiries are being made and comments are welcome.

Ongoing publicity and recruitment measures were reviewed. It was noted that the A to Z leaflet is available, selective advertising is carried out and some Divisions (VK4 and VK5) had prepared handouts. Long term plans for amateur radio in Australia were discussed with the result that the VK1 and VK4 Federal Councillors would be glad to receive comments so as to prepare a paper on the subject. A motion was passed that persons (Federal) should be the same as for Full and Associate members. A new form of membership application was agreed upon for universal use in all Divisions.

The Federal Constitution was examined and it was agreed to seek amendments on the lines that the Editor of AR must not be a member of the Executive but should be approved by the Executive as well as the Publications Committee. It was also agreed to delete the requirement that AR be issued monthly. A very long standing policy that the Executive must be located in the same city as the Central Office of the P and T Department was set aside. The grounds for this were that if Canberra it would become extremely difficult for the necessary number of volunteers to be found for both Federal and VK1 Divisional functions.

After discussions it was agreed that Maggubie shall net handle subscriptions to overseas magazines on behalf of members, except for Break-In and VHF Communications. Maggubie would continue to handle books and WIA items. The Executive were asked to investigate and identify the need for additional office facilities and personnel.

The next Convention was set down for 2nd to 4th May, 1981, at the same place. A number of speakers have been withdrawn from the grounds mainly that the States were changing WIA policies and were ongoing or had already been done.

## ANNUAL REPORTS

Each Annual Report was presented and discussed in great detail. There is much material in these reports of general interest and as they will form part of the official Convention Minutes (as well as having been previously circulated to Divisions) can be read on application to your Federal Council. One of the problems with Conventions was the apparent indifference of amateurs to make useful comments on aspects they did not like when rules were published. Some feedback came after the contest which was valuable. In fact the committee about the indifference of amateurs to make comments in advance of any proposed changes could be carried through to many other subjects.

During the Convention a most pleasing presentation ceremony was undertaken by Alex McDonald on behalf of all delegates. Dr. and Mrs. David Wardlaw and Mr. and Mrs. Michael Owen were presented with mementos (chosen secretly beforehand by the wives whose contributions in aid of their husbands was clearly to be recognised) for work on behalf of amateur radio before and after WARC 79. Another presentation was the handing over by VK1 to VK5 of the coveted RD Trophy.

# EXECUTIVE REPORT 1979-80

## THE EXECUTIVE

1 As in the past, the Executive through the Executive office has continued to produce WIA NEWS and the Federal papers in order to give up to date news of Federal happenings within the WIA and also international items of interest by this means there has been a continuous report from the Executive throughout the year.

2 The Executive for the year 1979/80 was elected as follows

David Wardlaw VK3ADW	President, Chairman
Peter Wollenden VK3ZPA	Executive Vice Chairman
	Vice President
Courtesy Scott VK3BHG	Nor. Treasurer
	Chairman Finance Sub-Committee
Ken Seddon VK3ACS	Chairman Federal Repeater Sub-Committee
Harold Hepburn VK3AFQ	Nominal Editor
John Bennett VK3ZA	

3 We welcomed a new Executive member this year — Courtesy Scott VK3BHG. Courtesy in taking over the Treasurer's job has been a very valuable member of Executive, bringing to us his experience in the financial field.

4 We also have Harold Hepburn back again on Executive. When he was last on Executive Harold was concerned with the previous revision of the "Handbook" and has become deeply involved in the negotiations with the Department on this again during the current revision.

5 With my own involvement as a member of the Australian Preparatory Group for WARC 79 and as a member of the Australian Delegation to WARC 79, Peter Wollenden as Executive Vice Chairman has had to carry much of the day to day load and has done so in an admirable manner.

6 Ken Seddon has continued to hold office as Chairman of the Federal Repeater Sub-Committee.

7 John Bennett, the last member of Executive, provides us with expertise in the publicity and PR areas.

8 I must mention the two members of the previous Executive who retired.

Graeme Scott VK3ZXR who has contributed so much in the editorial field.

Keith Rogge VK3YQ. We were all deeply shocked to learn of Keith's sudden death at Port Vila in the New Hebrides on 2 February of this year. Keith was one of the hardest working and loyal members that the Institute has ever had and his influence will be felt for many years.

9 Attendances for the first 11 meetings since the last Convention were —

Dr O Wardlaw	9
Mr H L Hepburn	8
Mr C. D. H. Scott	10
Mr K C Seddon	11
Mr P A Wollenden	11
Li Col J Mc Bennett	4

The following also attended —

G F Scott	1
Mr Bethells	3
Mr K Macdonald	4
Mr T Pittman	9
VK3JY	1
VK3ZWX	1
VK3YFA	1
VK3BHM	1
Mr Stephens	7
Mr P B Dodd	11

## OFFICE

10 Our Landlord at 517 Toorak Road, The Commonwealth Bank, gave indications early in the year that it was hoping to rebuild and as a consequence would only accept a monthly tenancy. Although we had not been given any order to vacate we initiated a search for alternative accommodation.

11 Suitable premises were found in Hawthorn Road, Caulfield North. We moved the office to these new premises on the 29th November.

12 The office space at Hawthorn Road is only slightly larger than the space at Toorak Road but

the configuration is markedly superior which is a great advantage particularly as there is now greater involvement of the office in the preparation of "Amateur Radio" Magazine.

## STAFF

13 A decision of the 1979 Convention was to add a full-time member to the Federal office staff of the WIA to handle "Amateur Radio" magazine matters. His job would be to take over the work of the part-time employee doing AR advertising, who would be no longer needed, and to relieve the Editor of the job of peering up AR.

14 Mark Stephenson VK3NOY was employed on a provisional basis and having satisfactorily completed his probationary period he has been employed on a permanent basis.

15 Peter Dodd in his role as Secretary Manager has been of constant assistance to the members of the Executive and various appointed officers.

## MEMBERSHIP

16 Again this year it is very pleasing to report a significant increase in membership.

17 It is to be hoped that this growth of the WIA will be maintained in the post WARC period as strong representation of the Amateur Service by a strong WIA will continue to be needed, particularly to obtain speedy implementation of the decisions of WARC 79 in Australia amongst other things.

## WARC 79

18 The preparation for WARC 79 continued throughout the year with myself, David Wardlaw VK3ADW, and Michael Owen VK3KJ attending all the Preparatory Group meetings, culminating in our appointment as Australian Delegates to WARC 79.

19 Appended as Report 80.04.01A is a comprehensive report of the Conference and results. Sufficient to say in this part of the report that the Amateur Service obtained many of its goals at the Conference but not without difficulties and due to no uncertain measure to the extensive preparation put in beforehand.

20 The most important single factor was the Amateur participation in the Special Preparatory meeting of the CCIR held one year before the Conference. I was extensively involved in the preparation for WARC in Australia which took up a major part of my time.

21 As there is a question in CCIR Study Group 6 concerning the Amateur Service, the WIA will participate in National Study Group 6L.

22 During the year, donations to WARC finances continued to be received and it looks as if we will be very close to our goal.

## IARU

23 The WIA must continue to support the IARU both world-wide and through the Region 3 Association. Careful thought will have to be given to the implications of any suggestions made by overseas societies with regard to the future of the IARU alongside our own thoughts on the matter. This is important as an effective IARU is needed to ensure that Amateur Radio becomes as widespread and unfettered as possible in the newly developing countries.

## VHF TV FREQUENCIES

24 The move of ATV from Channel 0 to Channel 16 was good news for Melbourne 6 metre operators.

25 However, this was negated by the announcement that "Ethnic" TV would use the vacated channel 0 when it commences in October 1980, this service to run in parallel with the one on UHF as was originally announced.

26 Our immediate protests were forwarded to the Minister for Post & Telecommunications by the Federal President asking why there had been a change in the plans for Ethnic TV from his earlier announcement. So far no reply has been forthcoming and, consequently, reminder has been forwarded to the Minister. It is understood that this assignment will also apply in Sydney.

27 Members and Divisions, particularly Victoria and NSW, were asked to make their views known. Some have received replies, unlike the Federal body, indicating that this is only a temporary assignment and will be terminated eventually leaving only UHF. However, it was pointed out that despite the known shortcomings the Minister and his advisers consider 0 as a useful TV channel.

28 As has been the case ever since the introduction of TV in Australia, the number and allocation of TV channels has been a political issue. Anyone who has studied the facts going back prior to 1950, when TV was introduced in Australia, will have no difficulty in seeing the manner in which the matter was dealt with, showing little concern for other users — particularly the Amateurs. This has disadvantaged the Australian Amateur VHF operator who compared with his counterpart in other developed countries, it has also involved the WIA in endless discussions and negotiations.

29 In his reply to our report on the increasing use of Channel 5A, the Minister for P. & T. alluded to the complexity of the matter but said that no further allocations of Channel 5A would be made until a detailed report is prepared following WARC 79, although where projects were well advanced it would be difficult to change the channel and we could operate a number of 5A stations to come into operation over the next 12-18 months. At WARC 79 the Australian footnote 275A was modified to read "in Australia the band 137-144 MHz is also allocated to the Broadcasting Service for television until the service can be accommodated within the regional broadcasting allocation".

30 Also, the world-wide Aeronautical Mobile (R) band has been extended up to 137 MHz (the lower limit of Channel 5A).

31 For many years the WIA has advocated that in areas where there is no Channel 5A transmitter permitted to be granted the frequency band 137-144 MHz by Amateurs as this is allocated in other countries in R2 and R3 in the international table and sometimes the MUF reaches 50 MHz but not 52 MHz.

32 There now seems to be the possibility of the segment 50.00 to 50.15 MHz being made available for use by the Amateur Service outside TV hours.

## AMATEUR HANDBOOK

33 Following last year's Convention, as a result of intervention by the Minister, the WIA was given further opportunity to comment on the draft "Handbook". Many of the WIA suggestions have been accepted but others were of course unable to succeed because of the nature of the regulations governing the Amateur Service.

34 The Department has stated that this rewrite of the Handbook is only an interim measure until the new legislation is enacted by Parliament. This legislation still appears to be some way off.

35 The WIA has repeatedly made the point that if any special ad hoc information is in the Handbook such as repeater conditions, then the material should not be the subject of examinations. The Department has agreed to this and I hope some indication will be given in the final printed Handbook as to which material will not be examined on.

## JOINT COMMITTEE

36 The Federal Joint Committee of WIA and P. & T. Department met on three occasions during the year. Although many matters were discussed the main theme during the year was the Handbook and matters concerned with examinations. It had been hoped that firm decisions and agreements would come out of these meetings. We are disappointed to a large extent that it has not happened. This is not to say these meetings are not useful but not as decisive as we had hoped.

37 Negotiations with the Department over repeater conditions have at last been concluded with the mutual agreement of both parties to their all these negotiations were protracted but show the value of insistence on close examination of unrealistic clauses in order to obtain a satisfactory alternative.

38 In response to our request for F6 on bands above 1 GHz, we should be granted permission to operate on this mode between 1240-1300 MHz and 1300-1350 MHz.

39 Reciprocal licensing has been discussed with the Department in an attempt to increase the number of countries with which we have reciprocal agreements. This is necessary as few countries have the twelve month visitor's permit such as Australia and a reciprocal agreement is necessary for an Australian to obtain permission to operate overseas. It is hoped that this may be of mutual interest and it looks as if there may be a breakthrough.

EDUCATION AND EXAMS

40 In the education field the AOC syllabus has now been agreed on, with a change to multi choice questions. One of the changes the Department feels that it is impossible to issue copies of past examinations using this format. However, a sample paper of 50 questions has been promulgated and will appear in the new Handbook.

41 The WIA has made a number of suggestions in the examination area which have been acted upon, for example, the carrying of a pass in Morse sending which will save a considerable amount of exam time. There are also been an increased facility for examination in remote areas.

42 It is disappointing that not much progress has been made in the production of educational material as decided on at the last Convention.

Project Asst

43 This worthwhile project continues to flourish and during the year the purchase of further recorders was authorised. It is projects such as this that do much to enhance the image of Amateur Radio.

VIDEOTAPES

44 The W A Videotape service under the care of Co-ordinator John Ingham VK5KG has continued to expand.

"AMATEUR RADIO"

45 Thanks must go to Bruce Bethols VK3UV and the Magaz Committee for maintaining the quality of "Amateur Radio".

46 With Mark Stephenson taking over the routine production work, which is now carried out in the Federal office much of the load has been taken from the shoulders of the Editor.

47 Early in the year rapidly escalating costs hit AR necessitating prompt action and close monitoring. With a slight reduction in paper quality the printer agreed to hold his charges constant until December. The change in paper was well received by the members. During the year there has been a marked drop in advertising which is causing a concern. Consideration is being given to going to Web Offset printing which could continue to hold our printing costs at a reasonable level. Unfortunately, we have still had some problems with the mailing service on the insertion of D used in the year.

48 Callbook. The call sign listings in the 1979 callbook were typeset, using our computer file, by an organisation that specialises in this type of operation. This was a vast improvement compared with the listings taken directly from the Monash printout. 10,000 copies were printed and not a great number are left. It is intended to publish a further edition this year in a more basic form and of a limited printing.

Magpas continues to augment our funds.

49 WICEN at the Federal level WICEN has made steady progress throughout the year having reached a state of acceptance with the Amateur community and many of master control agencies. This has been achieved as a result of calls out for bush fires, standbys for cyclones, standbys because of breakdown of Telecom communications during industrial unrest, simulated exercises and also by regular columns in AR and liaison at State and Regional levels.

50 Intruder Watch. At the end of 1979 AII Chander retired as Federal Intruder Watch Co-ordinator. AII has been the backbone of Intruder Watch in Australia for many years. Our thanks must go to him for his service to the Institute in this field. AII continues to serve Intruder watching as F3 Intruder Watch Co-ordinator. AII's successor is Graham Fuller VK3XN.

51 Sometime because of the lack of results the effectiveness of Intruder Watch is questioned. However, if we do not complain at all we are leaving ourselves open to hordes of intruders who would claim they are causing no harmful interference.

52 QSL Bureau. Ray Jones VK3RJ has retired from the position of Federal QSL Manager after 50 years of service. I would like to pay tribute to Ray's service to the WIA and to thank him on behalf of the WIA.

The year there has been a marked increase in the number of cards handled with a 10% increase in handling the cost of 100 cards.

52 Non-ionising radiation hazards. The Standards Association of Australia has set up Committee TC11/2 to study non-ionising radiation hazards. This WIA is being represented by Jim Lloyd VKICDR who also represents the Australian Radiation Society and the Department of Defence. Jim is well qualified to look after the interest of amateurs. Ken Seddon continues to represent us on SAA Committee 1454 - Siting of Radio Communications Equipment. He has been assured that some of the restrictions will apply.

53 VHFAC. The VHFAC under its new Chairman Keith Malcolm VK3ZVH has provided strong support for the Executive throughout the year. This was especially welcome on the matter of Channels 0 and SA.

Membership Statistics

54 These were compiled on the same basis as for previous years. Please note that P & T, Dept statistics refer to licences issued whereas the WIA statistics refer to the number of individual members. A short tabulation shows the number of second licences held by members. All statistics at 31.12.1979 (figures in thousands in brackets).

55 In conclusion I would like to thank all those officers of the Institute who gave so readily of their time. Their help was especially appreciated this year with my heavy involvement with WARC 79. On this account please exercise tolerance if I have accidentally omitted mention of any subject which others believe ought to have been mentioned.

(Sgd) D. A. WARDLAW VK3ADW  
Federal President

WORLD ADMINISTRATIVE RADIO CONFERENCE  
GENEVA 1979

REPORT BY AMATEUR DELEGATES

1. Dr. D. A. Wardlaw and Mr. M. J. Owen were members of the Australian delegation to the World Administrative Radio Conference Geneva 1979 representing the Amateur Service and nominated and funded by the Wireless Institute of Australia.

2. This report annexes an article by Mr. Owen published in Amateur Radio (March 1980) and extracts from the ARRL publication QEST as well as extracts from the current Australian Regulations of the ITU and extracts from the Final Acts of the World Administrative Radio Conference which together enable the new provisions affecting the Amateur Service to be fully understood. By this means considerable unnecessary work is avoided and hopefully a more useful report may be presented.

3. This part of the total report therefore deals with matters that are not otherwise covered.

4. Mr. Owen arrived in Geneva on September 26th and Dr. Wardlaw arrived in Geneva on September 23rd. The Conference was scheduled to finish on Friday, November 30th, but in fact the Final Acts were not signed until the evening of Thursday, December 6th. In these circumstances Dr. Wardlaw adhered to his previous schedule and left Geneva on Saturday, December 1st, whilst Mr. Owen remained to attend the Final Plenary meetings.

5. As Mr. Owen was accompanied by his family and had a larger apartment, he was able to undertake more entertaining than Dr. Wardlaw and thus expended more of the entertainment allowance granted by the Institute than Dr. Wardlaw. Dr. Wardlaw accordingly transferred 1,000 Swiss francs from his allowance to Mr. Owen and thus funds sufficient to cover his extended stay were made available. Neither Dr. Wardlaw nor Mr. Owen claimed any additional reimbursements over the amounts already advanced by the Institute.

6. The general report published by Amateur Radio outlines the options facing the Australian Administration in relation to the new HF bands to be allocated to the Amateur Service. We believe that it was strongly that the availability of the bands at as early a date as possible. Whilst, as its secondary status, the band at 10 MHz is not subject to a transitional procedure, the other two bands are. Logically we can expect the 30 MHz band to become available first. Given the inevitable congestion that will arise in that very small segment we believe that it is important to the Institute to press for the other two bands to be made available on an experimental basis outside the

transition period on the basis of existing Regulation 115. We do not believe we should be fearful of overcrowding in these new bands. We argued at the GPM and at the WARC that there was now and in the future there would be congestion in Amateur bands but that an enlarged family of frequencies would reduce congestion in the most spectrum economic way as it would enable Amateurs to select frequencies most appropriate for particular paths at particular times and different seasons and different parts of the sun spot cycle. Not only would any artificial rationing be inconsistent with that argument, it would also, in respect of the 10 MHz segment, remove pressure to not a local free services in that band. Further, we argued that 50 kHz was not enough. There will be a next time around. By then let us be able to go to the great sea of bandwidth made of Amateur bands.

7. We particularly wish to acknowledge the very close relationship that existed between Mr. Fred Johnson, the New Zealand delegation's Amateur representative nominated by NZART and the other members of the New Zealand delegation.

8. In submitting this report we would like to record our appreciation to the W A and its Federal Council for the trust that has been reposed in us. We can assure you that we have always been very conscious of our heavy obligations and we would also like to record our thanks to the leader of the Australian delegation, Mr. E. J. Wilkinson, and all of the members of the delegation. We may have been "Amateurs" but we were never made to anything other than full members of the delegation and were able to participate in many matters that were not of an immediate interest to the Amateur Service though many will have an indirect influence on the specific interest we were representing. Finally, we would like to thank those individuals clubs and groups, who very often quietly and personally have wished us well and assured us of their personal support. We may not have thanked everyone who did this but we can assure you that we have appreciated the thoughtfulness.

(Sgd) D. A. Wardlaw  
(Sgd) Michael J. Owen

25th March, 1980

THE WIRELESS INSTITUTE OF AUSTRALIA  
A COMPANY LIMITED BY GUARANTEE  
INCORPORATED IN VICTORIA UNDER THE  
COMPANIES ACT 1958

In accordance with the Companies Act, 1961, the Executive state the following —

- (a) The names of the Executives in office at the date of this report are —  
Dr. D. A. Wardlaw VK3ADW  
Mr. P. A. Wollenden VK3ZPA  
Mr. K. C. Seddon VK3ACB  
Mr. C. D. H. Scott VK3BNG  
Lt Col J. Mc L. Bennett VK3ZA  
Mr. H. L. Hapburn VK3AFQ
- (b) The principal activity of the Wireless Institute of Australia is —
  - 1 Represent generally the views of persons connected with Amateur Radio in the Commonwealth of Australia, its territories and dependencies.
  - 2 Promote the co-operation between the Divisions in the encouragement and development of amateur radio.
  - 3 Safeguard the interests of the Divisions and the members in relation to frequency allocations, rights and privileges.
  - 4 Promote the development, progress and advancement of amateur radio in all matters in relation to amateur radio in general.
- (c) The surplus of income over expenditure for the year ended 31st December, 1979, was \$4,734 compared with \$6,851 for 1978. There is no provision for income tax required as the Company is exempt under Section 103A(2) of the Income Tax Assessment Act.
- (d) During the year provisions were increased —
  1. Provisions for holiday and long service leave was increased by \$1,592 to \$5,192.
  2. Provision for Superannuation — increased by \$1,000 and interest received \$227 to \$5,879.
- (e) The Executive has taken reasonable steps before the Statement of Income and Expenditure and Balance Sheet were made out, to ascertain

that action had been taken in relation to the writing off of bad debts an making of provision for doubtful debts and to ensure all known bad debts to be written off and adequate provision to be made for doubtful debts.

- (f) At the date of this report the Executive is not aware of any circumstances which would render the amount written off for bad debts, or the amount of the provision for doubtful debts, inadequate to any substantial extent.
- (g) At the date of this report the Executive is not aware of any circumstances which would render the value attributed to current assets in the accounts misleading.
- (h) At the date of this report no charges exist on the assets of the Institute which have arisen since the end of the financial year and do not secure the liabilities of any other person.
- (i) There does not exist any contingent liability which has arisen since the end of the financial year.
- (j) No contingent liability or any other liability has become enforceable within the period of twelve months after the end of the financial year which in the opinion of the Executive will or may affect the ability of the Institute to meet its obligations when they fall due.
- (k) Since the end of the previous financial year the Executive has not received or become entitled to receive a benefit by reason of a contract made by the Institute or a related corporation with the Executive or with firms of which they are members or with companies in which they have substantial financial interests.
- (l) The results of the Institute's operations during the financial year were in the opinion of the Executive not substantially affected by any item, transaction or event of a material and unusual nature. There has not arisen in the interval between the end of the financial year and the date of the report any item transaction or event of a material and unusual nature likely, in the opinion of the Executive, to affect substantially the results of the Institute's operations for the next succeeding financial year.

Dated at Melbourne this 24th day of March, 1980.  
MEMBERS OF THE EXECUTIVE  
(Sgd) C. D. H. SCOTT  
(Sgd) K. C. SEDDON

#### STATEMENT OF INCOME & EXPENDITURE

	1978	1979
<b>Income:</b>		
Members' Subscriptions	\$97,098	\$91,836
Interest Received	5,138	5,074
Surplus — Magazine	7,055	8,426
— Call books	13,688	—
Donations — ASJA Award	75	—
— Other	5	—
<b>Expenditure:</b>		
Amateur Radio (Note 1)	58,517	33,445
Audit Fees — 1978	578	489
— 1979	700	—
Bank Charges	361	685
Catering and Entertainment	122	192
Committee Expenses	1,011	524
Convention Expenses	4,330	2,492
Depreciation	534	340
EDP Expenses	3,300	4,734
Electricity and Power	584	370
General Expenses	748	542
Holiday Pay and SGL Provision	1,692	—
Insurance	757	540
Membership Recruiting	3,023	2,568
Provision for Amateur Satellites	—	3,000
Postage & Freight	4,265	3,362
Rent and Rates	3,317	2,230
Repairs and Maintenance	228	167
Supervision	1,000	1,000
Stationery and Printing	2,789	4,545
Salaries and Secretaries	29,658	26,448
Telephone	651	884
Traveling Expenses	182	128
	119,328	80,515
<b>Net Surplus</b>	<b>4,794</b>	<b>6,821</b>
Accumulated Funds Brought Forward	33,100	26,279
Accumulated Funds Carried Forward	\$37,834	\$33,100

TABLE 1

	Full Licences	WIA Licences	% members to total licences	Other WIA members	Total WIA members
VK1	229	157 (123)	56 (53)	60 (53)	217 (176)
VK2	3639 (3633)	1530	45 (42)	245 (243)	2087 (1773)
VK3	2639 (2941)	1747 (1417)	48 (48)	367 (442)	2114 (1859)
VK4	1726 (1334)	944 (757)	55 (56)	157 (208)	1103 (860)
VK5/8	1528 (1296)	854 (680)	56 (53)	226 (265)	1080 (865)
VK6	914 (807)	609	53 (50)	107 (111)	595 (520)
VK7	328	258 (212)	67 (84)	62 (75)	318 (287)
Other	34 (19)	(—)	(—)	(—)	(—)
<b>Totals</b>	<b>12596 (10587)</b>	<b>6287 (5198)*</b>	<b>50 (48)</b>	<b>1227 (1398)</b>	<b>7514 (6536)</b>

Net gain — 978

% increase in total licences 19% (2009)

% increase in licensed WIA members 22% (1149)

\*TABLE 2. Total number of double calls in WIA member lists:

VK1	2
VK2	88
VK3	81
VK4	39
VK5	26
VK6	18
VK7	8
	260

Add 260 to 6287 = 6547  
6547 = 52% of total licences

TABLE 3. Total licences by grades

	Full	Limited	Novice	Total
VK1	171 (157)	45 (43)	64 (29)	280
VK2	2129 (2008)	943 (897)	1019 (732)	4091
VK3	1630 (1506)	1132 (980)	877 (455)	3639
VK4	741 (639)	469 (391)	389 (354)	1725
VK5/8	729 (667)	399 (321)	430 (305)	1558
VK6	495 (452)	224 (207)	194 (148)	913
VK7	198 (184)	100 (94)	86 (50)	384
Others	32	1	1	34
<b>Totals</b>	<b>6126 (5611)</b>	<b>3273 (2933)</b>	<b>3197 (2024)</b>	<b>12596 (10487)</b>

TABLE 4. WIA members by grade:

	F/C	A/T	S (Student)	G (Pens.)	L (Life)	X (Fam.)	Other	Total
VK1	155	60	—	—	1	—	—	216
VK2	1628	218	72	151	12	5	—	2087
VK3	1545	320	88	136	7	5	1	2103
VK4	867	148	4	—	4	5	10	1103
VK5/8	770	187	31	70	5	7	—	1080
VK6	440	98	18	37	4	1	—	595
VK7	238	58	5	9	4	4	—	318
Fed	—	—	—	—	12	—	—	12
<b>Totals</b>	<b>5663</b>	<b>1098</b>	<b>217</b>	<b>448</b>	<b>49</b>	<b>26</b>	<b>11</b>	<b>7514</b>

TABLE 5. Discontinuance of membership:

An examination of the EDP records for 1979 showed that 592 members listings were removed and these have been analysed as follows:	<b>Resignations</b> — Recorded on receipt of either or returned subscription notice. Many reasons given — lack of funds, going overseas, no longer requires AR etc.
<b>Deceased</b> 39	<b>Deletions</b> — Almost wholly because of being unfinancial. These listings also include deletions of the double record when full call obtained, i.e., obtaining full call after holding both Limited and novice calls (in the case the 'X' record only is deleted, the other is amended). The same applies if a member holding two call signs resigns or dies.
<b>Resignations</b> 40	
<b>Deletions</b> 40	
— In year after joining	44
— In 2nd year after joining	149
— In 3rd year after joining	140
— 4/5 years after joining	73
— 6/8 years after joining	48
— over 9 years after joining	59

## BALANCE SHEET AS AT 31ST DECEMBER, 1979.

	1978	1979
<b>Members' Funds:</b>		
Accumulated Funds	\$37,834	\$30,106
Special Funds — ITU/WARC		
(Note 2)	533	14,737
IARU (Note 3)	842	390
RWAA (Note 4)	1,213	1,153
	\$40,422	\$46,386
<b>Represented by:</b>		
<b>Current Assets:</b>		
Commonwealth Bank — General Account	\$14,521	\$41,260
Commonwealth Savings Investments	2,104	25,223
Austral Savings Bonds	42,100	23,100
Austral an Resources Development Bank	2,200	2,200
Sundry Debtors — Less Provision for Doubtful Debts (\$2,000)	18,264	12,572
Stock on Hand — at Cost	4,714	4,278
<b>Non-Current Assets</b>		
Furniture and Fittings — at Cost		
Less Provision for Depreciation (\$874)	1,788	1,855
<b>Deduct Current Liabilities</b>		
Sundry Creditors	1,603	2,468
Subscriptions in Advance	25,633	42,437
Provision for Superannuation	5,879	4,852
Provision for Holiday days and Long Service Leave	2,872	4,349
Deposits VK4	5,192	3,500
Dick Smith Education Fund	300	300
	3,500	3,500
	45,279	51,208
	\$45,422	\$46,386

## NOTES TO AND FORMING PART OF THE ACCOUNTS

## AMATEUR RADIO (Note 1)

	1978	1979
<b>Income:</b>		
Advertising	\$32,188	\$37,758
Subscriptions and Sales	1,719	2,742
Inserts and Sundries	2,948	4,349
	36,855	44,849
<b>Expenditure:</b>		
Awards	90	90
Honoraria	4,400	4,540
Postage	13,555	10,999
Printing and Distribution Costs	60,095	54,819
Salaries	7,941	7,778
Travelling Expenses	1,289	863
	95,380	76,289

<b>Excess Expenditure Transferred to General Account Representing Cost of AR to Members</b>	<b>\$55,517</b>	<b>\$33,445</b>
Special Funds — ITU/WARC (Note 2)	\$3,062	\$9,521
Balance 1 1 79 — ITU Fund	\$3,062	\$9,521
— WARC Fund	10,894	8,604
— WARC — Public Donations	781	—
	14,737	19,125

<b>Add Interest</b>	748	1,599
<b>Members' Contributions</b>	5,048	—
<b>Public Donations</b>	4,300	781
<b>Members' Donations</b>	—	573
	24,865	22,779
<b>Less Expended</b>	24,332	7,441
	\$ 533	\$14,737

<b>IARU Fund (Note 3)</b>		
Balance 1 1 79	\$ 390	\$ 4,683
Add Members' Contributions	1,145	1,338
	1,535	6,001
<b>Less Expenditure</b>	693	5,611
	\$ 842	\$ 390

TABLE 6 (Supplementary). WIA members:

	Members with Limited Licence (No. of Licences)	Members with Novice Licence (No. of Licences)	Members with Full Calls (No. of Licences)	No. Lic. Lim. Grade	Percentage of total Licensed WIA Members	No. Lic. Full Calls	Percentage of Total Limited Licences	Total Novice Licences	Total Full Calls Licences
VK1	30	27	100	19.2%	17.2%	63.7%	60.7%	42.2%	58.5%
VK2	354	481	106	19.2%	26.1%	64.6%	37.5%	47.2%	47.3%
VK3	373	421	853	21.4%	24.1%	64.6%	33%	48.0%	56.5%
VK4	151	338	455	16%	35.6%	48.2%	32.9%	54.3%	91.4%
VK5	147	258	451	17.2%	30.0%	52.8%	39.8%	59.5%	91.9%
VK6	68	110	312	13.5%	22.5%	63.9%	29.6%	58.7%	62.9%
VK7	52	69	135	20.3%	26.7%	52.7%	52%	80.2%	88.2%
Total	1173	1702	3412	16.7%	27.1%	54.3%	35.8%	53.2%	58.7%
	(= 6287)								

## RON WILKINSON ACHIEVEMENT AWARD

(Note 5)		
Balance 1 1 79	\$1,153	\$1,100
Add Interest	110	103
	1,263	1,203
Less Award Payment	50	50
	\$ 1,213	\$ 1,153

## AUDITORS' REPORT TO THE MEMBERS OF THE WIRELESS INSTITUTE OF AUSTRALIA

1 In our opinion the attached accounts give a true and fair view of the state of the Institute's affairs at 31st December, 1979, and of its surplus for the year ended on that date.

2 As required by the Companies Act 1961, we report as follows:



PHOTO 1: The coveted "RD" Trophy is now back in VK5 and at the 1980 Federal Convention Andrew Davis VK1DA (extreme right) hands over the trophy to Col Hurst VK5HL. Dr. David Wardlaw VK3ADW (left) looks on.

## In our opinion

(a) The attached accounts are properly drawn up (1) so as to give a true and fair view of the matters required by Section 162 to be dealt with in the accounts; and

(2) in accordance with provisions of that Act. (b) The accounting records and other records, and the registers, required by the Act to be kept by the Company have been properly kept in accordance with the provisions of that Act.

HEBARD & GUNNING, Chartered Accountants  
(Sgd.) P. W. HEBARD  
24th March, 1980 Partner

## THE WIRELESS INSTITUTE OF AUSTRALIA

## EXECUTIVE STATEMENT

## In our opinion

(a) The Statement of Income and Expenditure is drawn up so as to give a true and fair view of the surplus of the Institute for the financial year ended 31st December, 1979.

(b) The Balance Sheet is drawn up so as to give a true and fair view of the state of affairs of the Institute as at the end of the financial year.

## MEMBERS OF THE EXECUTIVE

(Sgd.) G. D. H. SCOTT

(Sgd.) K. C. SEDDON

## STATEMENT OF PRINCIPAL ACCOUNTING

## OFFICER

To the best of my knowledge and belief the accounts for the year ended 31st December, 1979 give a true and fair view of the matters contained in Section 162 of the Companies Act, 1961, and required to be dealt with in the accounts as presented

PRINCIPAL ACCOUNTING OFFICER

(Sgd.) P. B. DODD

# HF TRANSCEIVERS FROM YAESU

NEW YAESU FT-707 "WAYFARER"

The exciting new FT-107 range



High quality transceiver.  
All solid state operation with inbuilt AC power supply makes it well ahead of its time.  
Available in two colours - grey or ivory.  
Complete range of accessories available.  
Write for brochure now!

We also stock:



ICOM IC7HS	.....	\$289
LEADER Ham scope	.....	\$350
LEADER Dip meter	.....	\$80
TONO 7000E Computer	.....	\$885
DIWA CN620 SWR meter	.....	\$95
DIWA Ant. Coupler CN117	.....	\$155

## "DIAWA ROTATOR"



DR7500R Medium duty	"R"	.....	\$182
DR7500X Medium duty	"X"	.....	\$189
DR7600R Heavy duty	"R"	.....	\$264
DR7600X Heavy duty	"X"	.....	\$270

Chirnside Vertical Antenna Type CE-5B Features.  
Long length and high Q traps makes the CE-5B more efficient than similar types of antennas especially on 80 Metres.  
It is also very easy to tune and its construction is very rugged.

Specifications of the CE5B.  
Bands: 80-40-20-15-10 M. Operation.  
Power handling: 2 kW PEP.  
SWR: 1.5 to 1 or better.  
Length: 30' (approx)  
Weight: 9KG. Packed.

**\$99.--**

CE-42 15-10 M. Duo-Band

HI-Q Balun \$16.

**\$149**

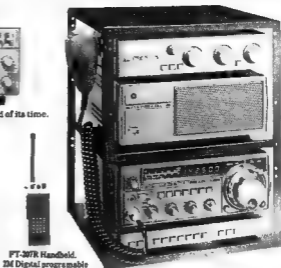
CHIRNSIDE CE-42 rugged duo band beam features 4 elements and uses independent reflectors for optimum results.

3 elements on 15 M.

3 elements on 10 M.

Director and driven elements have hi-q traps.

Forward gain is 8 dB and front to back ratio is in excess 25 dB.



FT-707R Handheld.  
2M Digital programmable transceiver.

Please Note !!!

These are recommended retail prices only.  
We do better

FT-707. All solid state HF transceiver incl. 10, 18, 24 MHz.....	
FV-707. Digital VFO for FT-707 incl. scanning.....	
PC-707. Antenna coupler for FT-707.....	
FP-707. DC power supply for FT-707 with inbuilt speaker.....	
Rack mount for all the above items also available.....	
FT-107M. HF transceiver excluding power supply.....	
FT-107DMS. HF transceiver incl. DMS and power supply.....	
PC-107. Antenna coupler for FT-107.....	
FV-107. External VFO for FT-107 series.....	
SP-107. External speaker.....	
FT-107 Range is available in the colours grey or ivory.....	
FT-720 New FM Transceiver.....	
YM-35 Scanning hand mt.....	
NC-2 Base Charger for 207A.....	
FV-101Z Ext. VFO for FT-101Z series.....	
FT-720 2M FM Transceiver Inc. Scanner.....	
FL-2100Z Linear for FT-101Z range.....	
FT-101Z. 160-10M Transceiver analog dial.....	
FT-101ZD. 160-10M Transceiver Digital.....	
optional digital display for FT-101Z.....	
optional Fan.....	
optional DC-DC converter.....	
YE-7A Hand mike.....	
YD-148 Desk mike.....	
FT-901DM 160-10M Transceiver.....	
FV-901 ext VFO for FT-901 & FT-101Z.....	
YO-901 Panoramic adapter monitroscope.....	
FC-901 Antenna coupler.....	
FTV-901. Converter 6M, 2M, 70 cm. all inc.....	
FTV-901. Converter 6M, 2M. only.....	
SP-901 ext. speaker.....	
FRG-7. Communication receiver.....	
FRG-7000 Digital communications receiver.....	
1F-2A Narrow band filter for FRG-7.....	
FT-7B. 80-10M Transceiver.....	
FP-12 12 AMP. power supply for FT-7B.....	
YC-7B Digital display for FT-7B.....	
FT-227R 2M Digital programmable transceiver.....	
YP-150 Dummy load/Wait meter.....	
FP-500X. Low pass filter 2kw.....	
QTR-24D Deluxe 24 hr. World clock.....	
FT-207R Handheld.....	
NC-2 Base Charger for 207A.....	
CHIRNSIDE CE-33 Triband Beam.....	

All FT-901 Accessories are compatible with FT-101Z series.

SPECIAL PRICE ON APPLICATION

MELBOURNE'S LEADING AUTHORIZED YAESU DISTRIBUTOR.  
CHIRNSIDE ELECTRONICS, 26 Edwards Road, Chirnside Park, Lilydale, 3116. Phone (03) 726 7353

## POSTAL & TELECOMMUNICATIONS DEPT.



## CB RADIO WHAT CHANNELS? PUBLIC COMMENT WANTED

Radio frequency arrangements and regulations for CB radio are to be reviewed.

The Postal and Telecommunications Department is conducting a public inquiry with the following terms of reference.

To report to the Minister for Post and Telecommunications as soon as possible on whether the present 18 channel 27 MHz Citizens Band Radio Service, which was established on 2 June 1977, should be retained after June 1982.

In considering this issue regard should be had to:

- (1) all matters associated with the technical operating conditions, regulations, frequencies, channel allocations and procedures governing the Citizens Band Radio Service in both the HF (27 MHz) and UHF (477 MHz) bands;
- (2) the need to utilise and manage the radio frequency spectrum for the maximum overall benefit to the Australian community;
- (3) Australia's international obligations in radio frequency management; and
- (4) the need to minimise interference to other services.

The Department is seeking written submissions on these issues from interested individuals and organisations. Submissions should be sent to:

**First Assistant Secretary  
Radio Frequency Management Division  
Postal and Telecommunications Department  
PO Box 5412CC  
MELBOURNE VIC. 3001**

**CLOSING DATE FOR SUBMISSIONS:  
15 AUGUST 1980**

**TELEPHONE INQUIRIES:  
MR. J. KENNEDY (03) 609 1512**

**July:**  
18/20 JACK FILES MEMORIAL CONTEST  
19/20 10-10 INT NET QSO PARTY  
20 RSGB WAB LF CW CONTEST  
26/27 VENEZUELAN CW CONTEST  
28/28 COUNTY HUNTERS CW CONTEST

**August:**  
9/10 REMEMBRANCE DAY CONTEST  
9/10 EUROPEAN CW CONTEST  
18/17 SEANET PHONE CONTEST  
116 DLF ZL CONTEST (LOTS OF FUN)  
23/24 ALL ASIAN CW CONTEST

**September:**  
13/14 EUROPEAN PHONE CONTEST

**October:**  
4/5 VK/ZL/OCEANIA PHONE CONTEST  
11/12 VK/ZL/OCEANIA CW CONTEST  
18/19 JAMBOREE ON THE AIR  
25/26 CG WW DX PHONE CONTEST

### REMEMBRANCE DAY CONTEST — 9-10 AUGUST 1980

This year there are no rule changes and the formula is also the same, so there should be no need for any confusion. In order to help your Division each full call should put in two logs, one for CW and the other for Phone, even though they may only be for the minimum number of contacts. Good luck in the contest—the friendly contest—and hope to work you.

For those looking for rules CG magazine has the most comprehensive list available. However a SASE to the FCM will get any of the above contest rules.

**10-10 INTERNATIONAL NET SUMMER QSO PARTY**  
Starts 0000Z July 19, 1980.  
Ends 2400 July 20, 1980.

QSO parties are open to all amateurs, but only 10-10 members are eligible for awards. All contacts must be made on 10m. Modes acceptable are AM, SSB, FM. QSO parties are not intended to demonstrate technical or contest endurance abilities, but to encourage interest in 10 metre operation. Members may submit membership collected for bar awards non-members may use them to qualify for 10-10 membership.

### RULES

1. Exchange call, city, State, name and 10-10 number
2. All station logs must be in UTC (GMT)
3. A station may be counted only once
4. An operator may credit his/her score only to a local chapter of which he/she is a member. A local chapter is one that can be worked on ground wave when the band is closed
5. One may work any 24 hours of the 48 hours available. They need not be consecutive but must be in a minimum of one hour increments starting with the first contact. Any portion of a clock hour must be counted as a full hour. Example: You operate from 0130Z to 0229Z. This counts as two hours operating.

### CLASSES OF OPERATION

1. Single operator.
2. QRP (20 watts PEP output SSB, 10 watts output AM)

### SCORING

1. Each contact is worth one point.
2. Add an additional point if the station has a 10-10 number

### AWARDS

In each class a first place certificate to each Australian call area.

Logs are accepted from members only and are due by August 20th, 1980. Mail to Robert Watson, 2 Suffolk Ct., Oceana de NY 11572. Cover sheet must show name, call, QTH, 10-10 number, chapter affiliation, total hours of operation, total contacts and total number of points claimed.

# Remembrance Day Contest 1980 — Rules

9-19 AUGUST 1980

A perpetual trophy is awarded annually for competition between Divisions of the Wireless Institute of Australia. It is inscribed with the names of those who made the supreme sacrifice and so perpetuate their memory throughout Amateur Radio in Australia.

The name of the winning Division each year is also inscribed on the trophy and, in addition, the winning Division will receive a suitably inscribed certificate.

## OBJECTS

Amateurs in each VK call area will endeavour to contact other amateurs —

1. In all VK call areas, P29, and ZL on all bands 1.8 through 30 MHz
2. In any VK call area (including their own), P29, and ZL on authorised bands above 52 MHz and as is indicated in rule 5.

## CONTEST DATE

0800Z 9th August 1980 to 0759Z 10th August, 1980.

All amateur stations are requested to observe 15 minutes silence before the commencement of the contest on Saturday afternoon. An appropriate broadcast will be relayed from all Divisional stations during 1½ hours.

## RULES

1. There shall be 3 sections —

- (a) Transmitting Phone
- (b) Transmitting CW
- (c) Race wing

However separate logs may be submitted for sections (a) and (b).

2. All Australian Amateurs (VK call sign) may enter the Contest whether their stations are fixed portable or mobile. Members and non-members of the Wireless Institute of Australia are eligible for awards.

3. Amateurs may use the following modes —

- Section (a) — AM, FM, SSB, TV.
- Section (b) — CW, RTTY.

However separate logs may be submitted for sections (a) and (b).

4. Cross mode operation is permitted but both stations may only claim points as for a phone/phone contact. Cross band operation is not permitted excepting via a satellite repeater.

## 5. SCORING CONTACTS

- (a) On the 3.5, 7 and 14 MHz bands a station in another call area may be contacted once on each band using each mode. That is, you may work the same station on each of these bands on Phone, CW, SSVT and RTTY.

- (b) On the 1.8, 21 and 28 MHz bands, a station in another call area may be contacted twice on each band using each mode provided that not less than 12 hours has elapsed since the previous contact on that band using that mode.

- (c) Between 1800 hours GMT and 2100 hours GMT on Saturday, intra-call area contacts may be made on the 1.8, 7, 21 and 28 MHz band once for each mode on each band.

- (d) Between 0300 hours GMT and 0759 hours GMT on Saturday intra-call area contacts may be made on 1.8, 21 and 28 MHz bands once for each mode on each band.
- (e) On the bands 52 MHz and above, the same station in any call area may be worked using any of the modes listed in rule 3 at intervals of not less than two hours since the previous same band/mode contact. However, the same station may be contacted repeatedly via satellite not more than once by each mode on each orbit.

- (f) All CW/CW, SSVT/SSVT and RTTY/RTTY contacts count double. Note rule 4 re cross mode contacts.

6. Multi-operator stations are not permitted (except as in rule 7), although log keepers are allowed. Only the licensed operator is allowed to make a contact under his/her own call sign. Should two or more licensed operators wish to operate any particular station, each will be considered as a contestant and must submit a log under his own call sign.

7. Club stations may be operated by more than one operator, but only one operator may operate at any one time, i.e. no multi-transmissions. All operators must sign the declaration.

8. Entrants must operate within the terms of their licences.

## 9. CYPHERS:

The serial number will consist of three figures that will be incremented by one for each successive contact. A contestant may start with any number between 001 and 999 but when 999 is reached he will start again at 001.

10. ENTRIES must be set out as shown in the example using one side of the paper only. Envelopes must be marked "Remembrance Day Contest", postmarked no later than 8th September, 1980, and posted to FCM, Box 1065, Orange 2800.

11. TERRESTRIAL REPEATERS: Contacts via terrestrial repeaters are not permitted for scoring purposes. However, contacts may be arranged through the repeater and if successful on another frequency, that contact counts for scoring purposes.

12. PORTABLE OPERATION: Log scores of operators located outside their own call area will be credited to that call area in which operation takes place, e.g. VK5XYZ/2. His score is added to the VK5 scores.

13. All logs shall be set out as in the example shown and in addition MUST carry a front sheet showing the following information in this order:

## EXAMPLE OF TRANSMITTING LOG

Date/Time	Band	Mode	Call sign worked	NR sent	NR rec'd	Points
-----------	------	------	------------------	---------	----------	--------

## EXAMPLE OF RECEIVING LOG, VICTORIAN SWL

Date/Time	Band	Mode	Call sign heard	NR sent	Station called	Points
10/8/80						
0612	7	P	VK5PB	002	VK8RU	2
0615	7	CW	ZL2AZ	004	VK4KI	8
0615	14	P	VK0ZZ	006	VK8FI	6
1820	28	P	VK3RAA	077	VK8ZZ	1

## SCORING TABLE FOR PHONE CONTACTS — ALL CW/CW, SSVT/SSVT and RTTY/RTTY CONTACTS COUNT DOUBLE

	From	0	1	2	3	4	5	6	7	8	9	P29	ZL
VK0	—	6	6	6	6	6	6	6	6	6	6	6	6
VK1	6	—	2	3	3	3	4	4	4	4	5	5	3
VK2	6	2	—	2	2	3	4	3	4	4	5	5	3
VK3	6	3	2	—	3	2	4	2	5	5	5	5	3
VK4	6	3	2	3	—	3	5	5	2	4	2	4	4
VK5	6	3	3	2	3	—	2	3	3	5	5	5	4
VK6	6	4	4	4	5	2	—	3	3	5	5	5	4
VK7	6	5	3	3	2	5	3	—	5	5	5	5	3
VK8	6	4	5	5	5	3	2	5	—	4	4	4	4
VK9	6	5	5	5	4	5	5	2	4	—	3	4	4
P29	6	5	5	5	5	2	5	5	2	5	—	4	4
ZL	6	3	3	3	3	4	5	3	4	4	4	—	—

All intra-call area contacts on 52 MHz and above, or as indicated in Rules 5 (c), (d) and (e), are worth one point.

Section, Score, Call Sign, Modes, Name, Address.

Declaration: "I hereby certify that I have operated in accordance with the rules and spirit of the contest." Signed \_\_\_\_\_ Dated \_\_\_\_\_

14. The Federal Contest Manager has the right to disqualify any entrant who, during the contest, has not observed the regulations, or has consistently departed from the accepted code of operating ethics. The Federal Contest Manager also has the right to disallow any illegible, incomplete or incorrectly set out logs.
15. The ruling of the Federal Contest Manager of the WIA is final and no disputes will be entered into.

## AWARDS (Sections (a) and (b))

Certificate will be awarded to the top scorer in each section for each call area and will include the top Limited and Novice station. There will be no outright individual winner. Further certificates may be issued by the FCM at his discretion.

The Division to which the Remembrance Day Trophy will be awarded shall be determined by the following formula —

Total call area score from sections (a)-(c) of rule 1 multiplied by the number of full call logs received from that area and divided by the number of full licences in that call area.

VK0 scores are added to VK7 and VK8 to VK5. Scores by VK3 stations are added to the mainland call area geographically nearest. Scores claimed by ZL and P29 stations are not included in the scores of any VK call area.

Acceptable logs for all sections shall show at least 10 valid contacts. The Trophy shall be forwarded to the winning Division. It is contained and will be held by that Division for the specified period.

## RECEIVING SECTION

1. This section is open to all Short Wave Listeners in Australia, Papua, New Guinea and New Zealand, but no active transmitting station may enter.

- Contest times and logging of stations on each band are as for transmitting.
- All logs shall be set out as in the example. It is not permissible to log a station on calling "CQ". The detail shown in the example must be recorded.
- Note the times and conditions set out in rule 5 (transmitting).
- Club stations may enter this section. All operators must sign the declaration.

**AWARDS**  
 Certificates will be awarded to the highest scorers in each call area. Further certificates may be awarded at the discretion of the Federal Contest Manager.

# DIVISIONAL NOTES

**VK2**  
 The Tamworth Amateur Radio Club wishes to advise that the "NOEL TAYLOR MEMORIAL FIELD DAY" will be held in the Tamworth area on the long weekend of April 4-5.

All amateurs from novice to Full Call will be entertained together with children of those attending.

For further details please contact the Field Day Committee, c/o Peter Square VK3DAU, PO Box W197, West Tamworth 2340. Also listen for VK2JW, VK2XKZ, VK2NMB, VK2DAU and VK2DHT for information.

# VK3

From Jack Thomas VK3NTR, Publicity Officer of the Western Zone comes the following news.  
 The annual meeting of the Western Zone of the WIA (Vc Division) was held at Ararat on May 3rd, 1980.

Unfortunately attendance was poor.  
 Office-bearers for 1980-81, with Woody VK3AGD in the chair, were—

- President: B Stares VK3ZBS/HVI
- Senior Vice-President: J Hutton VK3ZML/NDT
- Junior Vice-President: K Reid VK3BPH
- Secretary/Treasurer: J Thomas VK3NTR
- Zone Technical Officer: J Darns VK3BPM
- Wipac Co-ordinator: O Gallant VK3AEU
- Intruder Watch Co-Ord.: D Baulch VK3AKN
- Publicity Officer: J Thomas VK3NTR
- Zone Committee: John VK3BPM, Peter VK3AQO, George VK3GN, Brian VK3BWA, Oliver VK3AEU, Charlie VK3VEJ
- Repeater Committee: John VK3BPM, Ray VK3ACB, George VK3DN Jim VK3ZML, Brian VK3BWA, Laurie VK3NDL

The Zone has its hook-up every Monday at 8 p.m., 1000 hrs UST on Channel 7 2m and 3.685 plus or minus QRM.

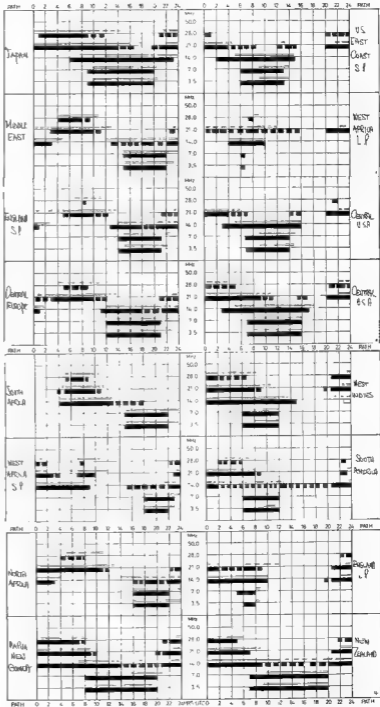
# QSP

**APRIL WAS HERE**

Most intriguing to read about a device which looked like a large ionospheric cone and had the effect of completely reversing the direction of any field trying to pass through it. The mathematics are stated to be very involved but an important consequence was that gravitational attraction was completely reversed within the area of the device. After some experimentation by the amateurs who invented and developed it the logical outcome was an "aura station" 70 cm repeater lathered some 330 metres above ground, the height being governed only by feeder losses. This gem came from the April issue of Radio Communication. CQ for the same month carried an article explaining that sporadic E does not exist. Amateurs and scientists world-wide appear to have been the victims of a gigantic hoax. In fact, says the article, the phenomena ascribed to sporadic E is really caused by a closely-guarded secret, a lightweight aluminium wire grid with a weight of about 0.035 grams, 4 metres in diameter, suspended at a height of 50 to 60 miles by 150 KW of electromagnetic rad at or

# IONOSPHERIC PREDICTIONS

Len Poynter VK3BYE

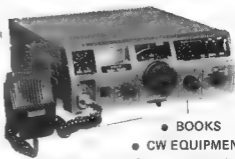


# NOVICE

**FT 7**  
HF MOBILE  
TRANSCIVER

**YAESU**

**FT-101Z**  
BUDGET MINDED  
TRANSCIVER



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- MORSE TAPES
- RECEIVERS
- SERVICE
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- ENCOURAGEMENT AND ASSISTANCE
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TRS 80, SCORCERER, PET AND CBM and  
soon SYSTEM 80



This HF rig is high performance at budget price with today's technology. An SSB/CW Transceiver providing resolution to greater than 1 kHz, RF speech processor, analog frequency display. FT-901 series accessories can be added later.



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HF SSB TRANSCIVER

A transceiver specifically built for the novice and the limited budget. Modular in design optional extras can be added as required. The ideal layout of the front panel means simple operation as fixed stat on or mobile. A marvellous combination of high performance at modest cost. Kenwood is one of the most widely used brands of amateur gear in Australia.

## SERVICE DIVISION

We have a fully equipped electronic service division. We can service enthusiast and commercial electronic gear efficiently and at a reasonable charge.

Wholesalers, agents, manufacturers and retailers please consider us for your next Queensland service contract.

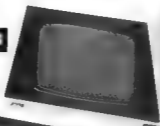
CW can arrange service and service contracts of Commodore computers within Australia and PNG.

Telephone (07) 341 5377

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\*WHILE CURRENT STOCKS OF M65 LAST

\*Refer to license limitations on Morse and RTTY communications



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UNIQUE TO CW ELECTRONICS  
With each Commodore 16K or 32K mini computer purchased from CW Electronics by a licensed Amateur Radio Operator will come, at no extra cost, a MACRO TRONICS M65 Ham Interface for Morse Code and RTTY (and ASCII) Transceiving.

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AH. BRIAN (07) 341 4767 TELEX AA 40811

## LETTERS TO

## THE EDITOR

Any opinion expressed under this heading is the individual opinion of the writer and does not necessarily coincide with that of the publisher.

Box 68, Yarram 3971  
April 20.

The Editor  
Dear Sir

I like many other amateurs I understand that Novice licensing was to be of a limited tenure of two years

I am fortunate that most Novice calls are known to progress to the full ticket and of course being on air is an ideal way of improving one's capabilities, both theoretically and CW

Seems to me, however, that a fair number, having reached the dizzy heights of 5 w.p.m. and that "hard" multiple choice paper, are prepared to remain Novices for evermore (Be interesting to know how many are still "N" calls from early days) Furthermore some of these fellows put out remarkably strong signals from their modified (?) appliances. Could of course be super efficient ear systems

Before we degenerate completely to CB level (and I reckon we are well on the way) is it possible to get the department to bring in limited tenure. What we are at it, introduce some system to give the "home-brew" type Novice some incentive. Send enough mail to call brokers (let's include) are appliance operators these days. Let us at least start the new make off on the right track

It's my opinion that if you cannot make AOCOP after two years on air then you are definitely in the wrong hobby

Yours faithfully

Jack Mellor VK3AMG.

15 Broughton St, Tumut NSW 2720.  
17/4/80.

The Editor,  
Dear Sir

I feel prompted to write this letter after a lot of thought and reading several issues of AR. I would have thought by now that someone would have given a reason for several of my fellow amateurs (I think) will allow someone so humble to call himself that "few" they are so special that they deserve that own frequencies, I am of course wrong about the new allocations that came out of WARC 79

Do these people think they are so alone in wanting for a clear place of the spectrum to work on? The rest of us would like to have a contact without the problem of other stations spluttering at over us, but I think we are getting a bit selfish suggesting that a special person with better qualifications be allowed the 24 MHz section or any other section for that matter

I think the whole Amateur Radio Fraternity AOCOP are entitled to use the new allocated bands, not just a few people who think they are special because they know a bit more (I agree—Ed)

I am sorry this letter sounds a bit sour, but that's how I feel I will admit. I am a bit spoiled, the amateurs who thought we were completely unselfish, and some of that must have rubbed off

Yours sincerely

Butch Chapman VK2BYB.

202 Frankston-Flinders Road,  
Bairnreid 3826.  
17th March, 1980.

Mr P B Dodd,  
Wireless Institute of Australia  
PO Box 150  
Toorak 3142

Dear Peter,  
Your letter of 8th February and the attached cheque came as a great and pleasant surprise to me.

The thought that I may be awarded the 1979 Higginbotham Award as a "thank you" for the work put in on the Magazine/Publications Committee

over the past twenty-odd years. Only the other day I went through my "personal papers" file and discovered a letter from George W. Baly VK3AOM when he acted as secretary to the Committee, dated 15-4-66, indicating that I had joined the Committee on 18th February, 1958.

I would like to thank Bruce and the other members of the Committee very much for this award, which I shall always treasure, and I shall always remember the pleasure I received from my association with the Committee.

If members happen to be passing here at any time I am sure that my wife and I will always be glad to make them welcome in the best spirit of "Amateur Radio".

Yours sincerely,

Syd Clark VK3ASC.

## WICEN

Ron Henderson VK1RH  
Federal WICEN Co-ordinator,  
53 Hannaford St, Page ACT 2614  
Ph. (062) 54 2058, A.M.

WICEN is the Amateur Radio Service Emergency Communications Organisation established to assist the Statutory Authorities during periods of Civil Emergencies.

The Amateur Radio Service is defined in International Telecommunications Regulations as a service of self-training intercommunication and technical investigation conducted by duly authorised persons with a personal non-commercial interest in the development of radio techniques.

In Australia, the Wireless Institute of Australia (WIA) is the national organisation representing Amateur Radio licensees. Established in 1910, the WIA is the oldest radio society in the world and is a member of the International Amateur Radio Union, whose membership representation includes almost every country in the world—East and West—developed and developing.

Each State in the Commonwealth except the newly created Northern Territory State, is a Division of the WIA, with its own autonomous Divisional Council, its own WICEN organisation and with representation on the Federal Council of the WIA.

A Federal WICEN Co-ordinator, residing in Canberra, is the WICEN advisor to the Federal Executive body and the liaison officer to the Natural Disasters Organisation.

In New South Wales, the WICEN organisation is controlled by a State WICEN Co-ordinator, who is also Chairman of the State WICEN Committee, which is a sub-committee of the NSW Divisional Council.

The State is subdivided into ten Regional WICEN areas, plus five smaller Regions covering the densely populated districts of Sydney and adjoining areas.

Each WICEN is controlled by a Regional WICEN Co-ordinator assisted by a number of local WICEN Co-ordinators who, in the main, reside in the major centres of population in the Region.

WICEN is also a fully affiliated member of the NSW Volunteer Rescue Association, which is closely aligned to, and operates in conjunction with, the NSW Police Rescue and Disaster Branch.

From the foregoing it will be apparent that the WIA, and WICEN, is well structured and efficiently administered.

In NSW the administrative organisation of WICEN has been specifically tailored to meet the requirements of any NSW Government Act that could be involved during the course of a Civil Emergency.

The self-imposed discipline and dedication that a prospective amateur licensee must acquire to obtain a licence is a most valuable asset when that person is involved in an emergency situation and is bound by the particular Parliamentary Act governing the emergency.

Without exception all members of the NSW WICEN organisation are volunteers and are licensed Radio Amateurs—many of whom occupy senior

positions in the electronics and communications industry. To obtain a licence, a prospective amateur must successfully complete examinations conducted by the Postal and Telecommunications Department of the Australian Government. The examinations embrace radio and electronic theory (transmitters, receivers, aerials, power supplies, etc.), national and international regulations and, for certain grades of licence, Morse code proficiency.

Prior to acquiring a licence the prospective amateur must complete and sign a Statutory of Wireless Transmissions. This document which prohibits the licensee divulging any text, or portion thereof, of any transmission made or received.

Radio Amateurs are licensed to operate in designated frequency bands ranging from medium frequency (1600-1860 kilohertz) to super high frequency (2100-2200 megahertz) and, resulting from the recommendations of the 1979 World Administrative Radio Conference (WARC) in Geneva, a number of additional bands are to be made available shortly, which is indicative of the international recognition of the role and importance of the Amateur Radio Service. The amateur licence has a wide choice of modes of communication, with Morse code, amplitude and frequency modulation, on simple side band, radio telephony and so on. Television being most popular, and has other modes available for specialised and experimental purposes.

To date, the Amateur Radio Service has placed eight amateur HF/VHF/UHF satellites in orbit around the earth, with more planned and under construction. The satellites were designed built and financed by amateurs on a world-wide co-operative basis.

The majority of NSW WICEN members operate both fixed and mobile stations, together with portable and hand-held transceivers for use in areas inaccessible to vehicles.

The increasing number of amateur VHF repeater stations, over twenty in New South Wales alone, provides amateurs with reliable free cost communications throughout the majority of the State, offering up to 100 km range from low-power hand-held portable transceivers.

In NSW WICEN is an organised disciplined body which can provide a unique specialised community service that no other organisation, be it voluntary or statutory, can provide.

WICEN offers the Statutory Authorities a variety of communication modes, a wide range of sophisticated equipment and the trained disciplined manpower to operate the facilities and if required competent relief personnel for the Authority's own communications terminals—all at no cost to the Authorities, the Government or the general community.

The foregoing is but a brief resume of the Amateur Radio Service and the NSW WICEN organisation.

H. Freeman VK2NL.

### WICEN IN THE HOUSE

Extract from the NSW Legislative Assembly Parliamentary Debates (Hansard), 6th March 1980. The Member for Gordon, T.J. Moore, LL.B., M.P., speaking during the debate on Bush Fire matters—

"I draw attention also to one group of volunteers not often mentioned—the Wireless Institute of Australia emergency surveillance network—who come in to help provide communications between volunteer brigades working outside their own area. They have a radio network that is not on their own domestic frequency. They do a magnificent job and are far too often overlooked in the bouquets handed out by people, such as the Minister, the honourable member for Pittwater and the honourable member for Wapen when dealing with disasters in their areas."

### BUYING OR SELLING GEAR?

# HAMADS

MAKE IT HAPPEN FAST

# AWARDS

## COLUMN

Bl Verrall VK5WV

7 Llac Avenue, Flinders Park, SA 5025

### WORKED ROCKHAMPTON AWARD

This Award known as the WRA, is awarded by the Central Queens and Branch of the Wireless Institute of Australia to any licensed amateur in any part of the world operating from a fixed, portable or mobile amateur station, on the following conditions —

1. STATIONS OUTSIDE AUSTRALIA. By making ten (10) two-way contacts with licensed amateur stations in Rockhampton, Queensland, on either CW, AM, SSB or RTTY on any HF and/or VHF band

2. STATIONS WITHIN AUSTRALIA: As in Rule 1, but fifteen (15) two-way contacts. (Stations resident in Rockhampton are not eligible for the award.)
3. No cross mode contacts are permitted.
4. Contacts via Rockhampton's 2 metre repeater are allowed
5. Contacts with the official Central Queensland Branch station VK4WIR will count as two points.
6. Specially endorsed certificates will be issued for contacts made on one band and/or one mode only, i.e. CW, AM, SSB, etc.
7. Claims are to be submitted on a LIST showing stations worked, date, GMT, band and mode. QSL cards are NOT to be sent
8. The cost is 5 IRCs or equivalent
9. Applications together with the list should be forwarded to —  
Central Queensland Branch WIA,  
GPO Box 496, Rockhampton, Queensland 4700, Australia.

### DESCRIPTION

The Award measures 215 mm x 285 mm, printed on white card with the map of Queensland in blue, surrounded in blue and gold and all printing in black

### DEVIL AWARD

The TASMANIAN DEVIL AWARD is created to interest Australian and overseas amateurs in collecting reasonably rare VK7s Tasmania, the island state of Australia has many features the "Devil" Award is named after one of these

### TO QUALIFY

You may qualify for the Award in any one of the sections or sub-sections

### SECTIONS

#### 1. MF-HF

- (a) Open — by the use of any combination of bands above 30 MHz, and modes available to applicant
- (b) One band — of those available
- (c) One mode — of those available
- (d) All Novice — contacts with Novice calls.

#### 2. VHF

- (a) Open — by the use of any combination of bands above 30 MHz, and modes available to the applicant
- (b) One band — of those available
- (c) Satellite — contacts via amateur satellites. Cross band to HF allowed if permitted under licence terms.
- (d) Repeater — via in-band repeaters

### Claims

#### HF

Applicants must establish two-way contact with a number of VK7 amateurs depending on the applicant's location

Australia, including Tasmania	50 contacts
Oceania, Antarctica	30 contacts
Asia, North America	20 contacts
Europe, South America	10 contacts
Africa	7 contacts

#### VHF

Applicants to contact 20 VK7 amateurs with at least one station in each of the three WIA Branch areas.

### Verification

Claim logs, with applicant's name, call, section to show station connected date, time, band and mode. The claim to be signed by applicant and countersigned by two other amateurs. Spot checks will be made with contacted stations. A VK7 for confirmation QSLs will not be required.

### Commencement

Contacts made since first day in January 1978 can be used in claims

### Applications

A fee of 10 IRCs overseas or 5 IRCs within Australia or equivalent should accompany a claim to cover cost of award and postage and be sent to —

VK7 QSL Bureau,  
PO Box 371D,  
Hobart, Tasmania 7001

### Description

The Award measures 205 mm x 230 mm, printed on light blue card with the map of Tasmania in green. "DEVIL AWARD" and the nose and mouth of red, the head in black and all printing in black

Good hunting

## THE RADIO AMATEUR'S CONVERSATION GUIDE

A most useful adjunct for working the DX station not proficient in English. Good also for contests.

\$9.00 brings you a copy, post paid

MAGPUBS

P.O. Box 150, Toorak, Vic. 3142

# DEVIL AWARD TASMANIA



The Tasmanian Division of the  
Wireless Institute of Australia  
grants the

TASMANIAN DEVIL AWARD

No. \_\_\_\_\_ to  
operator of Amateur Radio  
Station \_\_\_\_\_

Awards Manager

Date \_\_\_\_\_

Section \_\_\_\_\_

Section \_\_\_\_\_

Award No. \_\_\_\_\_



## MAGAZINE REVIEW

Roy Hartkopf VK3AOH

### ZERO BEAT March 1980

[Youth Radio Scheme magazine] State News (G). VHF Shifter (C) Etched Circuit Boards (G) 'Battleship' game using T.L. 505 LEDs (C). YRCS Directory (G)

### BREAK IN January-February 1980

WARC Results (G) Pin Dodes for TR Switching (C).

### HAM RADIO February 1980

Coaxial Line Transformers (GC) Yagi Antenna Design (T) Plasma Dode Experiments (Micro-wave Detectors) (TP)

### WIRE

Radio Electronics is running a series of articles (Part 6 in the March 1980 issue) on a backyard satellite TV receiver Frequency around 4 GHz and some interesting stripline design is included. If copies are difficult to find, try the public reference library

(G) General (C) Constructional (P) Practical without detailed constructional information (T) Theoretical (N) Of particular interest to the Novice.

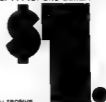
## AMATEUR RADIO IS A RESPONSIBLE SERVICE

LET'S KEEP IT THAT WAY

# WANTED

## RIPPED OFF TAPE BUYERS

Are you tired of paying too much for your cassettes and accessories? Your problems are over ... for one dollar!



You receive

- One sample Dindy Super C46 cassette with a 5 year guarantee
- One copy of Dindy News the cassette user's journal, packed with info, accessories and bargain-priced cassettes (a. brands, of course) at prices up to 50% off retail
- A special introductory offer too good to refuse!



**TO: DINDY MARKETING  
15 BOUNDARY STREET  
P.O. BOX 55, RUSHCUTTERS  
BAY, SYDNEY 2011**

20,000 people have bought over 1,000,000 cassettes from us. They all can't be wrong. \$1 spent could save you hundreds.

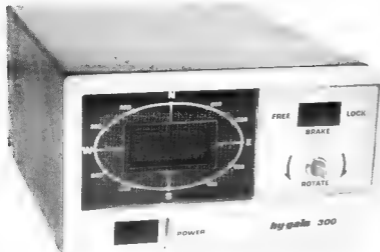
Mr/Mrs/Miss

Address



Postcode

PP6004/AR01



#### HYGAIN HEAVY DUTY ANTENNA ROTATOR

Hygain have recently announced the release of their new heavy duty antenna rotator, the HDR-300.

The HDR-300 when tower mounted will easily turn and hold up 25 square feet of antenna area and with a stall torque of 5000 lbs., is rated higher than any other amateur rotator on the market. The HDR-300 weighs 12.7 kg (28 lbs.) and the control console 7.28 kg (16 lbs.). Rotation time for 360 degrees is sixty seconds and power requirements are 110/220V AC at 50/60 cycles and for the motor 24V AC 12A maximum, 1/10 HP PSC single phase.

Maximum vertical load for the unit is 226.8 kg (500 lbs.), braking torque (m.n) 5000 in. lbs. (565 N-m) and coasting torque 600 in. lbs. (67.8 N-m).

For further information and current price contact the distributors, Audio Taxis Communications Pty. Ltd., 1 Little Street, Paramatta NSW 2150. Phone (02) 833 4344 or telephone their regional offices Melbourne (03) 277 5311, Queensland (07) 44 5358.

At left: the control box for the new Hygain HDR300.

#### VICOM NEW ZEALAND EXPANDS

Due to the huge success of VICOM's New Zealand operation an address change which will provide both larger and better positioned premises has been made.

The new address is 84 Whites Line East, Lower Hutt. Phone 66 7825.

#### DAIWA RELEASES NEW WARC ANTENNA TUNER

Daiwa look like being first on the market with an amateur radio antenna tuner which has been designed to incorporate the WARC bands of 10, 18 and 24 MHz. The coupler handles 500W PEP and includes the popular direct reading 'cross needle' type SWR/PWR meter.

Output impedances of 10-300 ohms can be handled with an input impedance of 50 ohms. The new model will be called the CNW418, is distributed by Vicom and should be available soon at most amateur stores.

For further information contact Vicom International or your favourite amateur dealer.

#### ICOM RELEASES NEW WARC TRANSCEIVER

ICOM of Japan have released their latest HF amateur transceiver the Model IC720. The new-comer to the ICOM stable incorporates a general coverage receiver (0.1-30.9 MHz) and all the new bands approved by WARC 79.

In common with most other ICOM transceivers, the nucleus of the unit is a microprocessor. Tuning is accomplished by the successful 'optical chopper' VFO, which means better linearity no backlash and no variable capacitors — eliminating problems known to occur in other transceivers.

The IC720 also features a speech processor, bandpass tuning and an effective noise blanker as standard.

To enhance the IC720 a new range of options will be released including an automatically tuned HF mobile antenna system, covering all HF bands.

Principal specifications are as follows —

#### FREQUENCY COVERAGE

Receive 0.1 to 30.9 MHz  
Tx/Rx 160m, 80m, 40m, 20m, 15m, 10m, plus 10/11/24 MHz.

#### MODES

SSB/RTTY/CW/AM

#### OUTPUT POWER

SSB 10-100W variable.

#### INTERFERENCE

Better than 60 dB below.

#### SENSITIVITY

Better than 0.25  $\mu$ V for 10 dB S + N/NL.

For further information and latest price on the new IC720 contact the Australian distributors, VICOM International on Melbourne (03) 699 6700, Sydney (02) 436 2766 or any of their authorized dealers.

AROUND

THE TRADE



The new ICOM IC720 is pictured above and should be available shortly.





# What about a change of subject?

You will have seen our adverts for Yaesu's **FT107M** and **FT707** – but we should remind you that there are many other products available from “Yaesu **The Radio**” and Bail. Take a look at this brief list.

## “Yaesu The Radio” present:

**FRG7** Receiver ☐ **FRG7000** Receiver ☐ **FL2100Z** Linear Amp ☐ **FT101Z** and **FT 7B** Transceivers ☐ **FT901D** Transceiver ☐ **Monitor Scopes** ☐ **External VFO's** ☐ **Transverters** ☐ **Ant. Couplers** to match your rig ☐ **FT 207 R VHF** Handheld ☐ **FT 227 RB** 2m Mobile ☐ **FT 225 RD** 2m All Mode ☐ **FT 625 R** 6m All Mode ☐ **FT 220** VHF/UHF Mobile  
Write or call for our brochures.

## And We stock:

Electronic Morse Keys ☐ Morse Keyers ☐ HF & VHF Antennas ☐ Rotators ☐ Cables ☐ Mobile Antennas ☐ Yaesu World Clock ☐ CW/RTTY reader and **ASC11** Key Board.



## And

### We stock Spares:

We hold an extensive inventory of spare parts for Yaesu equipment and we will service your Yaesu set.

**Service to Australian Hams**  
**is our Slogan.**

**bail**

ELECTRONIC SERVICES

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EMTRONICS (02) 396 6378  
WAGGA (069) 21 2125  
QLD.  
C.W. ELECTRONICS (07) 341 5377

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GRAHAM STALLARD (08) 43 7981  
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WILLIS ELECTRONICS (09) 321 7609  
KALGOORLIE (090) 21 1906  
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J.D. ELECTRONICS (003) 44 5000  
BURNIE (004) 31 1708

And other regional centres.

JAS 7980-34

# CUSTOM COMMUNICATIONS

## HAM RADIO & AMATEUR GEAR

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Cnr. Church & Darcy Sts.,  
PARRAMATTA N.S.W. 2150



**NEW**

### TONO-DOT MATRIX PRINTER



**\$990**  
MODEL  
HC-800



**NEW**



**ICOM IC-2A**  
SYNTHESIZED 2 MTR  
HANDHELD 800 CHANNELS  
**\$279**



**NEW**

### AUTO-ANTENNA TUNER



CNA 1001  
200 WATT  
**\$269**  
CNA 2002  
2.5 Kw  
**\$569**

**TONO - 7000E**  
COMMUNICATIONS COMPUTER **\$899**



**NEW**

### SWR - BRIDGE

3.5 - 150 MHz



**\$29**



**STILL  
POPULAR**

**IC - 22S**  
LOW COST 10 w MOBILE



**\$299**



#### OTHER LEADING ICOM EQUIPMENT

IC-260 2 MTR ALL MODE MOBILE	\$599.00
IC-701 HF-TRANSCEIVER 160-10 MTR	\$1199.00
IC-551 6 MTR ALL MODE 100 w	\$859.00
IC-251A 2 MTR ALL MODE AC/DC	\$847.00

... AND MANY OTHERS! CALL IN AND INSPECT

#### VICOM HELICAL WHIPS AND YAGIS

10 TO 80 MTR	\$28.00
5 ELEMENT YAGI 2 MTR	\$35.00
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Phone: 635 6399, 635 6546, A.H.: 674 1719